

LIBRARY OF THE



ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 4, No. 8 October 1980



AMNH

The Gardner D. Stout Hall of Asian Peoples

A history of the Museum's Asian collections is, in essence, a history of the Museum itself. It is a history of the men and women of the Museum and their dreams, ambitions, ideas, and theories. It is a history that began with Franz Boas, the father of American anthropology, and has continued through the efforts of hundreds of ethnographers, curators, and explorers to the present day.

When these people looked to the East, they saw many things. Some saw a chance to study and record ways of life that would soon disappear forever; some hoped to find in Asia the birthplace of the human race; some saw Asia as the key to understanding human migrations to

the New World; and some saw Asia as a continent of high adventure, the last great frontier.

For 111 years, these people traversed the Asian continent, assembling what is perhaps the finest ethnographic collection of Asian material in the West. And the very best of that collection, some two percent, is now on display in the new Gardner D. Stout Hall of Asian Peoples.

In the twentieth century we have seen how fragile human culture can be. Western technology, political theory, and economic development has transformed, and in some cases destroyed, the cultures of Asia. The Hall of Asian Peoples is more than an exhibition; it is a record of the so-

cial organizations, beliefs, religions, and ways of life that were traditional Asia.

The center section of this issue is devoted to the early expeditions that gathered the nucleus of the Museum's Asian collections. We hope it will enrich your understanding and enjoyment of the new Gardner D. Stout Hall of Asian Peoples.

(Above.) A Mongol listens to a concert broadcast from Vladivostok, Russia, on the Third Asiatic Expedition's radio set. Bringing back the Museum's Asian collections is the subject of a special center section in Rotunda this month.

The Great Wall and Beyond

Early Museum explorers crossed the Gobi desert, pushed into unknown regions of Siberia, and traveled with the nomads of Tibet. Read in their own words how they assembled the magnificent collections now on display in the Gardner D. Stout Hall of Asian Peoples. Photographs and articles, **page 6, 7, 8**. Special programs and events on Asia, **page 5**.

Urban Spaces

How do New Yorkers behave in the city's streets, plazas, and parks? The Members' program with William Whyte, the *Natural History of Urban Spaces*, originally scheduled for October, has been moved to Wednesday, November 12.

Page 3

Hosts of Ghosts

Meet a lively group of spirits and other supernatural beings from the four corners of the earth at a Members' storytelling program.

Page 2

Urban Treks

Accompany naturalist Sidney Horenstein on jaunts through Riverside Park and Battery Park.

Page 4

Backstage View

Members are invited on a special Behind-the-Scenes tour of the Museum's Ichthyology and Exhibition departments.

Page 3

Ghost Stories from Around the World

On Sunday, October 26, the lights in the Education Hall will dim, candlelight will flicker across the stage, and Members will enter a world of ghosts, goblins, witches, and other supernatural spirits. In celebration of Halloween, the Membership Office has asked Laura Simms, one of New York's most popular storytellers, and Jackie Torrence, who hails from North Carolina, to tell ghost stories from around the world.

You will listen to ghost tales from India, Japan, England, and Native American tales from the Northwest Coast. Ms. Tor-

rence will weave folktales from North Carolina that have been passed down in her family for generations. You will meet an Indian dream merchant, Uncle Remus, Blackbeard the pirate, and the two white horses of Ashville.

There will be three storytelling sessions at 11:00 a.m., 1:30 p.m., and 3:30 p.m. The morning session, with slightly friendlier ghosts, is geared especially for children seven years old and under. The afternoon sessions are for all ages. The program is free to Members, \$3.00 for non-members.



Please register me for the Ghost Storytelling Program marked below. (Indicate a first and second choice of times)

_____ 11:00 a.m. (geared for children under 7)
_____ 1:30 p.m. (all ages)
_____ 3:30 p.m. (all ages)

Number of people: _____ (Participating, Donor, and Elected Members are entitled to up to six free tickets; Associate Members are entitled to one. All other tickets \$3.00).

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Members' Story Program, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Members' Memo

The formation of the Asian Collection, displayed in the new Hall of Asian Peoples, is the subject of a special center section in *Rotunda* this month. In it we hope to answer questions people frequently ask — but don't find answers to in labels — such as, "Where did it come from?" and, "How did you get it?"

The collection, possibly the finest Asian ethnographic collection in the West, is a rich variety of objects amassed through expeditions, purchases, gifts, and the like. It reflects the interests of curators, directors, presidents, and trustees, as well as generous donors, over the Museum's 111 year history. More recently, where the Museum found parts of the collection weak for the needs of the hall, many — especially

Asian-Americans — generously contributed to fill in the gaps.

To put this story together, we rooted around through early *Annual Reports*, expedition memoirs, old issues of *The American Museum Journal*, the fifth floor manuscript vaults, and the photographic archives. We've had exciting moments matching up archival photographs of objects now in the hall being used by a people in Asia. The objects in the hall, we discovered, were brought out of Asia through just about every conceivable form of transportation, including porters, camel caravans, mules, dogsleds, motor cars, homemade rafts, steamers, and airplanes. It's been a fun way to bring another side of the Asian story to you, and we hope you enjoy it.

Another aspect of this

month's *Rotunda* I'd like to point out is a list of some corporations that have been very important to us. We have devoted a section of page 11 to saying thank you to the 228 corporations that gave us over \$500 this past year. In all, corporations gave over \$900,000 to the Museum. If any of you work for those companies, you can be proud of your double support of the Museum — both through your own membership and through their corporate gift.

Many corporations help us in another way through matching gifts programs. Next time you renew your membership, check to see if they will match your gift. We'd appreciate it.

Kate Bennett-Mendez

ROTUNDA

ISSN 0194-6110

Vol. 4, No. 8
October 1980

Kate Bennett-Mendez — Manager of Membership Services
Douglas J. Preston — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
Mark Abraham — Copy Editor
Marc Peters — Writer
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1980 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Natural History of Urban Spaces

New York is a people watcher's paradise. Stop by a street corner in East Harlem or along a plaza on Sixth Avenue and you will see sunbathers, stoop sitters, hot dog vendors, street musicians, smoochers and "shmoozers" (those engaged in idle conversation), and a host of other people doing a myriad of activities.

William Whyte, director of New York City's Street Life Project has been watching people and studying the way they behave in urban spaces for the past ten years. He will discuss the fascinating and often surprising results of his study at our November Members' Program, the *Natural History of Urban Spaces*, on Wednesday November 12, at 7.30 p.m. in the Auditorium.

Mr. Whyte will use films and remarkable time-lapse photography to illustrate the way people interact with their urban environment. He will explain why some urban spaces are teeming with people and activity, while other spaces have be-

come concrete deserts. He will discuss the entertaining but often subtle social rituals that are practiced in New York streets; why people sit, stand and walk where they do; and how the behavior of New Yorkers compares with that of their big city counterparts around the world.

Mr. Whyte has served on many environmental commissions and written numerous articles on the urban environment, one of which appeared in the August 1980 issue of *Natural History* magazine.

This program is free to Members and \$3.50 for non-members. Coffee will be served prior to the program.

A typical crowded plaza in New York can tell us a great deal about human behavior in the city. Learn about the natural history of urban spaces at the November Members' program on Wednesday, November 12.



William Whyte

Participating, Donor, and Elected Members are invited to join a special Behind-the-Scenes Tour at the American Museum of Natural History Thursday evening, November 13. Saturday, November 15. Wednesday evening, November 19.

You will be taken to these fascinating areas of the Museum, closed to the general public:
Department of Exhibition
Department of Ichthyology

You will meet members of the Museum staff at each location. The tour will last approximately an hour and a quarter. Light refreshments will be served at the conclusion of the tour. Reservations at \$6.00 each can be made by completing and returning the adjacent coupon. Early reservations for the limited places are advised.



AMNH

Watch Museum preparators in action on a Behind-the-Scenes tour of the Department of Exhibition. The tour will also visit the Department of Ichthyology (fish), where Members can meet curators and hear about their research.

Tours will leave at fifteen minute intervals beginning at 5:00 p.m. on Thursday, November 13, and Wednesday, November 19, and at 10:15 a.m. on Saturday, November 15. We will send you a confirmation card by mail. Your card will indicate the exact time your tour will start.

All reservations received by October 15 will be treated on an equal basis.

Please indicate a first, second, and third choice I would prefer:

Thursday, November 13, between 5:00 p.m. and 6:30 p.m.
Thursday, November 13, between 6:30 p.m. and 8:00 p.m.
Saturday, November 15, between 10:15 a.m. and 12:00 noon
Saturday, November 15, between 1:00 p.m. and 3:30 p.m.
Wednesday, November 19, between 5:00 p.m. and 6:30 p.m.
Wednesday, November 19, between 6:30 p.m. and 8:00 p.m.

Enclosed in my check for \$ _____ to reserve _____ places at \$6.00 each for the Behind-the-Scenes Tour.

Name _____

Address _____

City _____

State _____

Zip _____

Daytime phone _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York NY 10024.

Urban Explorations

Sidney Horenstein of the Museum's Department of Invertebrates has led Members on fossil tours down Fifth Avenue, around Roosevelt Island, and through Central Park. This fall, he will continue his urban explorations with tours of Battery Park and Riverside Park.

Battery Park. Members will learn about both the history and natural history of this park, named for the battery of cannons that stood there between 1683 and 1688. Members will view 350-million-year-old fossils embedded in the base of one of the park's monuments and explore Castle Clinton, a building that has served as a fort, auditorium, immigration station and aquarium. Mr. Horenstein will point out the variety of trees that dot the park's landscape and discuss the different stones used to construct the buildings that surround the park's perimeter.

Riverside Park. Located in Manhattan's Upper West Side, Riverside Park provides an excellent vantage point to learn about the geological forces that shaped New York City and its

environs. Mr. Horenstein will point out evidence of glaciers that covered New York thousands of years ago. He will explain how they sculpted New York's landscape and what people have done to reshape it. Members will also learn how the Hudson River and the Palisades of New Jersey were formed. The tour will look at the different trees and plants that abound in Riverside Park, and at the end of the tour Members can stroll down Riverside Drive to look at different building stones.

These tours are open only to Participating, Donor, and Elected Members of the Museum. The fee for each tour is \$3.50 per person. To join, please use the adjacent coupon.

Members are invited to tour Manhattan's Battery Park (pictured here) or Riverside Park with geologist Sidney Horenstein.



New York City, Dept. of Parks and Recreation

Please register me for the tour(s) marked below:
(Indicate a first and second choice of times)

Battery Park

10:30 a.m. tour Saturday, October 25

1:00 p.m. tour Saturday, October 25

There will be an overflow tour at 3:00 p.m. if the other two are filled. Please check this space if you can attend this tour.

Number of people: _____

Riverside Park

10:30 a.m. tour Sunday, November 2

1:00 p.m. tour Sunday, November 2

There will be an overflow tour at 3:00 p.m. if the other two are filled. Please check this space if you can attend this tour.

Number of people: _____

I have enclosed my check for _____ (\$3.50 per person)

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Members' Tours, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Membership Highlights Tours



AMNH

Over 2,000 Members have participated in our Membership Highlights Tour program since its inception in 1978. These tours, led by Museum volunteers, give members an in-depth look at some of the Museum's most fascinating exhibition halls. We are pleased to announce the following tours for October, November and December of 1980.

Oceanic Birds. In the space of an hour this tour will take you on a bird walk that encompasses thousands of miles of the Pacific Ocean and its islands. You will see puffins nesting along the cliffs of the Bering Strait and birds of paradise on the islands of Papua New Guinea. Members will learn about the albatross which has the largest wingspan of any bird, finches studied by Darwin for his theory of evolution; and the nene, the national bird of Hawaii. The tour will focus upon how these and other birds have adapted to their environment.

Deserts. Contrary to popular belief, deserts are not merely lifeless wastelands. In fact, 140 different species of plants and animals inhabit the deserts of the world. This tour will take you to the Sahara and Kalahari deserts of Africa, the Gobi desert of central Asia and the deserts of the American southwest to learn the survival strategies plants, animals, and humans have developed to cope with this harsh environment.

Minerals and Gems. The Star of India, weighing 563 carats, is the largest blue star sapphire in the world. It is one of many beautiful sapphires, emeralds, diamonds and other gems that Members will view during this tour. Members will also be able to see and touch the largest topaz crystal in the world, a piece of jade weighing two tons, samples of petrified wood, and the inside of a geode.

Northwest Coast Indians. This tour will first venture into the halls of North American

Forests and North American Mammals to look at the Olympic rain forest and the animals that are an integral part of the cultures of the Northwest Coast. The tour will then proceed to the Hall of Northwest Coast Indians. There a fascinating array of objects will greet you, including magnificent totem poles, a 64-foot Haida canoe, Chilkat blankets woven from the wool of a mountain goat, wooden boxes sewn together with spruce roots, intricately carved pipes, and, of course, the brightly colored and fantastic masks for which the Northwest Coast cultures are famous.

Amphibians and Reptiles. What's the difference between a crocodile and an alligator? Why does a snake flick out its tongue? How does a frog make its calls? This tour will answer these and other questions about

There are numerous desert habitat exhibits scattered throughout the Museum. Learn about deserts on one of several membership Highlight Tours this fall.

creatures whose ancestors lived over 300 million years ago. Members will be able to marvel at exotic species, including bright yellow poison-dart frogs, komodo dragons, leatherback turtles, pythons, and a New Mexican whiptail lizard species which is all female!

These tours are open only to Participating, Donor, and Elected Members of the Museum. Tours last about an hour and a quarter. To join, please fill out the adjacent coupon.

I would like to sign up for the following tour. Please sign up for one tour only and indicate an alternate choice.

- _____ Amphibians and Reptiles. Sun., Oct. 19 at 11:00 a.m.
- _____ Minerals and Gems. Wed., Oct. 22 at 6:30 p.m.
- _____ Deserts. Wed., Oct. 29 at 6:30 p.m.
- _____ Amphibians and Reptiles. Sat., Nov. 1 at 10:30 a.m.
- _____ Amphibians and Reptiles. Wed., Nov. 5 at 6:30 p.m.
- _____ Deserts. Sun., Nov. 9 at 11:00 a.m.
- _____ Oceanic Birds. Sun., Nov. 16 at 11:00 a.m.
- _____ Minerals and Gems. Wed., Dec. 3 at 6:30 p.m.
- _____ Northwest Coast Indians. Wed., Dec. 10 at 6:30 p.m.
- _____ Oceanic Birds. Wed., Dec. 17 at 5:30 p.m.
- _____ Deserts. Sat., Dec. 20 at 11:00 a.m.
- _____ Northwest Coast Indians. Tues., Dec. 30 at 11:00 a.m.
- _____ I would like to attend both tours I signed up for if there is space available.

Number of people: _____

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Membership Category: _____

Please mail with a self-addressed, stamped envelope to: Members' Tours, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Special Events: The Hall of Asian Peoples

Asian Dance

Three free performances of Asian dance and music will be presented in the Auditorium in October and November.

On Wednesday, October 29 at 7:00 p.m., Indrani and her daughter Sukanya will present classical Indian dances. They will perform in the Bharata Natyam, Kuchipudi, and Orissi styles.

On Sunday, November 2 at 2:00 p.m., Japanese dancer Saeko Ichinohe and her company will perform modern dance inspired by the Japanese tradition.

On Wednesday, November 5 at 7:00 p.m., the Chinese Music Ensemble of New York will present an evening of traditional Chinese music and some modern compositions.

Free tickets will be distributed on a first-come, first-served basis near the first floor Information Desk beginning two hours before each performance. No tickets may be reserved. For more information, call 873-1300, ext. 559

Epic Film on Nepal

On Wednesday evening, October 15, an epic film achievement by Michael Oppitz will be premiered in the Auditorium. Filmed in Nepal, *Shamans of the Blind Country* examines the lives of traditional healers of the Northern Magar tribe in the Himalayas.

Because of its unusual length, (3 hours and 40 minutes) the program will begin promptly at 6:00 p.m. Dr. Oppitz will give a brief introduction and will respond to questions afterwards. This film is not recommended for children.

Weekend Films

Those interested in exploring Asia through film are invited to four weekends of free films presented in the Auditorium this fall. The films will be repeated each day.

India. October 18 and 19.

2:00 — *Kishan and the Magic Chariot*. Kenneth Nelson, 1979. Story of a boy and how he taught his schoolmaster.

2:15 — *Rana*. Debbie Kingsland, 1978. A college student's life in New Delhi.

2:35 — *Jama Masjid Street Journal*. Mira Nair, 1979. A personal record by a young woman of life in New Delhi.

2:55 — *From the Ocean to the Sky*. Michael Dillon, 1979. Adventurers journey by jet boat up the Ganges river.

Japan. October 25 and 26. Two films by John Nathan will be featured.

2:00 — *Full Moon Lunch*. 1977. Tokyo family makes lunches for Buddhist temple ceremonies.

3:00 — *Farm Song*. 1978. Daily life of a rural Japanese family.

The Himalayas. November 8 and 9

2:00 — *Beyond the Forbidden Frontier*. C.S. Cutting, 1935. This film, shot during the famous Cutting expedition to Tibet, contains the first footage of Tibetan life.

2:30 — *Rumtek*. Rameshwar Sharma, 1978. An inside look at a Tibetan monastery.

3:10 — *The Living Goddess*. Frank Heimans, 1978. About the Kumari of Nepal, who select virgin girls to be living goddesses.

China. November 15 and 16. China through the eyes of two Chinese-Americans, Sue Yung Li and Shirley Sun

2:00 — *X'ian*, 1980. The ancient Chinese city, including footage of the spectacular treasures of the Han and Tang imperial tomb mounds with thousands of clay warriors.

3:00 — *Suzhou*, 1980. A city of canals, bridges, gardens, and artisans.

3:30 — *Beijing*, 1980. Beijing (Peking), China's imperial capital for 600 years, now becoming a modern center of culture and commerce.

Asian Civilizations

Walter A. Fairservis, Jr., who served as scientific consultant for the new Gardner D. Stout Hall of Asian Peoples, will be giving a lecture series, *Asian Civilizations*, on four Thursday

evenings starting October 23. Illustrating with color slides, Dr. Fairservis will discuss the religions, family life, and history of the major cultures of Asia. It is especially suited for those who want to learn more about the artifacts, cultures, and peoples featured in the hall. The series runs from 7:30 to 9:00 p.m. in the Auditorium, and is \$20 (\$18 for Participating, Donor, and Elected Members). As this program was previously announced, please call 873-7507 for ticket availability and preregistration.

Gallery Talks on Asia

The Department of Education will present gallery talks this fall that will focus on the Gardner D. Stout Hall of Asian Peoples. General hall talks will be given

Thursday, November 6

Tuesday, November 18

Thursday, December 4

Tuesday, December 16

In-depth tours of various aspects of Asian culture will also be given. On Tuesday, December 9, Paul Sanfaçon will present the *World of Islam*. On December 30, Phyllis Mandel will discuss *Asian Textiles* in the new hall. And on December 18, Robert Aylward will offer a tour of the Hall of Asian Mammals, adjacent to the new hall.

All gallery talks are free and may be joined at the first floor Information Desk at 2:00 p.m. on the day of the tour.

People Center Asia Weekends

The People Center is featuring live programs of dance, music, and arts from various Asian cultures. All programs are free, and take place on weekends from 1:00 to 4:30 p.m. in the People Center (second floor, off the Hall of Man in Africa).

On October 18 and 19, the focus will be on India, its culture and peoples. The programs include classical Indian dance, traditional sitar music, crafts, and palmistry.

On October 25 and 26 and November 1 and 2, Japan is featured in the People Center. Special programs include Kendo dance; a demonstration of the Koto, a long stringed instrument; and Japanese cooking.

Later weekends will feature the Himalayas (November 8 and 9), China (November 15, 16, 22, and 23) and the Near East (November 29 and 30). Look for details in the November Rotunda

The Holy Land Before Christ.

Claireve Grandjouan, professor of classics at Hunter College, will give a slide-illustrated lecture, *The Holy Land Before Christ*, on December 3, at 7:00 p.m. in the Auditorium. Grandjouan will discuss how recent archeological finds have shed new light on our understanding of the Holy Land. Tickets are \$5.00 (\$4.00 for Members) and may be obtained by sending a check to the Education Department, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Japanese Theater

In late December, the *National Theater of the Deaf* with the Touchstone Center are presenting four short performances based on the life of the Japanese haiku poet, Issa. Four deaf actors and one hearing actor will dramatize his life and works. The free performances, especially suited for children, will take place on December 27, 28, 29 and 30 at 2:30 p.m. in the Auditorium.

1980 Margaret Mead Film Festival

Films of China, Iran, and the Soviet Union will be shown at the 1980 Margaret Mead Film Festival on Saturday and Sunday, October 4 and 5. A program of films can be obtained at any Museum entrance or by writing to the Education Department. (See article page 9.)

Expeditions to the East: The Collections in the Hall of Asian Peoples

By Douglas J. Preston

The Museum's magnificent Asian collections, now on display in the Gardner D. Stout Hall of Asian Peoples, are the result of 111 years of expeditions, gifts, and purchases. But more than any thing else it is the result of the vision of four men: Franz Boas, Morris K. Jesup, Roy Chapman Andrews, and Harry Shapiro.

One of the grandest projects undertaken by the Museum was the famous Jesup North Pacific Expedition. Morris K. Jesup, a founder and third president of the Museum, believed in the theory that America had been "peopled by migratory tribes from the Asiatic continent." To settle the question, and to settle it in a big way, he organized an expedition that remains unique in the history of anthropology. No other expedition has been so ambitious, so extensive, lasted so long, or brought back so much material as the Jesup North Pacific Expedition.

Jesup put Franz Boas, then a curator of ethnology, in charge of the project. Boas sent expeditions to just about every culture living in areas along the North Pacific rim, including Washington State, the Northwest Coast, Alaska, the Aleutians, Siberia, Kamchatka, Manchuria, Japan, and China. Boas didn't care all that much about Jesup's pet theory — it was simply one question among many. Boas had radical ideas for his day; he saw the fragile aboriginal cultures of the circum-Pacific rim quietly dying under the influence of the West. Boas wanted to preserve as much as he could of these cultures before it was too late; their languages, grammar, myths and stories, religious beliefs and practices; their household objects, pots, gourds, clothes, even the food they ate and the tobacco they smoked. He wanted everything. (Ironically, it was this approach that later got him into trouble. The Museum administration, watching its precious storage space fill up with what seemed like junk, finally balked. After all, what good were tins of Russian tobacco collected in eastern Kamchatka, Siberia, or powdered "dragon bones" bought in a Chinese pharmacy? Boas and the Museum parted company.)

Boas chose three men to lead the Asian half of the expedition: the German anthropologist Berthold Laufer, and two Russians, Waldemar Jochelson and Waldemar Borgoras.

Laufer began collecting for Boas in Sibena, and later in China (where he bought practically the entire contents of a Chinese village, including the clothes off the people's backs.)

On one of his first trips, Laufer arrived in Vladivostok on June 19, 1898. From there he landed on the island of Saghalin in late summer, where he remained throughout the bitter Siberian winter studying the Gilyak, Tungus, and Ainu peoples. On March 4, 1899, he sent the following report to Boas:

My Life on a Siberian Island

"I did not succeed in obtaining any anthropometric measurements. The people were afraid that they would die at once after submitting to this process. Although I had their confidence, I failed in my efforts in this direction, even after offering them presents which they considered of great value. I succeeded in measuring a single individual, a man of imposing stature, who, after the measurements had been taken, fell prostrate on the floor, the picture of despair, groaning, 'Now I am going to die to-morrow!'"

"I started comparatively late on my journey along the east coast of Saghalin, because I was detained for two months and a half by a severe attack of influenza. As soon as I had sufficiently recovered, I visited one of the Gilyak villages where the people were celebrating one of their bear festivals. I was welcomed with much delight, since I met several of my acquaintances of last summer. For five days I assisted in the ceremony, and was even permitted to witness the sacrifice of the dog, which is kept secret from the Russians. . . . On New Year's eve I reached my southernmost point on the island. On the following day I took phonographic records of songs, which created the greatest sensation among the Russians as well as among the natives. A young Gilyak woman who sang into the instrument said, 'It took me so long to learn this song, and this thing has learned it at once, with-



One of the main objectives of the Jesup North Pacific Expedition was to take "anthropometric measurements" of the people. The expedition took hundreds of photographs of the measured people, including these two bewildered Tungus children.

out making any mistakes. There is surely a man or a spirit in this box which imitates me!" and at the same time she was crying and laughing with excitement."

Among the Reindeer People

Boas sent Waldemar Jochelson to the Arctic regions of Siberia, north of where Laufer was working. Jochelson and his wife took a steamer to Kuska, a little town at the mouth of the Gishiga River, arriving on August 16, 1900. With a zoologist, an interpreter, and two packers who served as guides, the Jochelsons crossed the Arctic tundra on horseback. After a harrowing journey, during which they lost their guides for two days, struggled through quicksand and bogs, and weathered several snowstorms, they finally arrived at the Reindeer Koryak village of Kuel. Here we will let Jochelson resume the story in his own words:

A Kumiss feast, a traditional religious celebration of the Yakut of Siberia. The Museum possesses the finest examples of Kumiss vessels in the world, some of which are on display in the hall.



"While among the Maritime Koryak, we lived most of the time in their underground dwellings, which are reached by a ladder leading down through the smoke-hole. It is almost impossible to describe the squalor of these dwellings. The smoke, which fills the hut, makes the eyes smart. It is particularly dense in the upper part of the hut, so that work that has to be done in an upright position becomes almost impossible. Walls, ladder and household utensils are covered with a greasy soot, so that contact with them leaves shining black spots on hands and clothing. The dim light which falls through the smoke-hole is hardly sufficient for writing and reading. The odor of blubber and of refuse is almost intolerable; and the inmates, intoxicated with fly agaric, add to the discomfort of the situation. The natives are infested with lice. As long as we remained in these dwellings we could not escape these insects, which we dreaded more than any of the privations of our journey."

"The winter tents of the Reindeer Koryak are so cold that we could not work in them, therefore we had to put up a tent of our own. It was furnished with a small iron stove, and there we carried on our ethnological and anthropometrical work. At night, however, the tent was very cold, and we slept in bags made of wolf-skins."

"The condition of affairs in northeastern Siberia happened to be very unfavorable during the time of my visit. A famine prevailed among the Yukaghir of the Yassachna. I assisted them as far as I could, and sent a messenger to Sredne-Kolymsk to request the assistance of the government. In the spring of 1902 the inhabitants of three Yukaghir tents on the Omolon were found starved to death. Even in Sredne-Kolymsk the fishing had been a complete failure, and the people were compelled to kill their dog teams because they could not feed them. Hunting on the tundra had also been a failure."

Kamchatka Odyssey

The third expedition leader, Waldemar Borgoras, was working with the Chukchee, Kamchadal, and Pacific Koryak tribes in the extreme northeastern part of Siberia and the Kamchatka peninsula. He landed at the mouth of the Anadyr river in late July, 1900, at a little town called Mariinsky Post. In 1900, Mariinsky Post was the farthest the Russians and Cossacks had pushed into northeastern Asia. Using the town as his base, Borgoras made extensive excursions into unexplored country, as well as visiting areas that had come under the Russian influence. He writes:

"Unfortunately I was taken ill with influenza in one of the Kamchatka villages. At one time, indeed, my illness became so alarming, that the Cossack, who also felt responsible for the success of the expedition, asked me for instructions as to which way to carry my body and my 'official papers' in case I should die on the route. I ordered him to tie up everything in curried leather, and to take it with all possible despatch to the Anadyr."

"My route lay across the border-line between the Koryak and the Chukchee reindeer-breeders, who in former times were involved in continuous warfare with each other, and then along the line of Kerek villages. The latter are a branch of the Maritime Koryak, who live in the most remote part of the country, which is very poor in natural resources. In former times they lived chiefly on walrus, but within the last few decades, i.e., since the arrival of American whalers had driven the walrus farther to the north, they have been rapidly dying out from continual starvation."

"Between the Kerek villages and the first camps of the Anadyr Reindeer Chukchee lies an uninhabited, mountainous country. It is unknown to the Kerek, who therefore could not supply us with guides, and we had to pass through it, guided solely by the course of the frozen mountain rivers up to the watershed."

and then down to the tributaries of the Anadyr. This journey lasted seventeen days, and nearly exhausted the strength of both dogs and drivers. "I reached Marinsky Post on March 26. "The results of this work are studies of the ethnography and anthropology of the Chukchee and Asiatic Eskimo, and partly of the Kamchadal and of the Pacific Koryak. These studies are illustrated by extensive collections, embracing five thousand ethnographical objects, thirty-three plaster casts of faces, seventy-five skulls and archaeological specimens from abandoned village sites and from graves. Other material obtained includes three hundred tales and traditions, one hundred fifty texts in the Chukchee, Koryak, Kamchadal and Eskimo languages; dictionaries and grammatical sketches of these languages; ninety-five phonographic records, and measurements of eight hundred sixty individuals. I also made a zoological collection and kept a meteorological journal during the whole time of my field-work."

The collections that these three explorers brought back were gathered just in time. World War I, the Russian Revolution, the spread of Christianity, and disease all contributed to the extinction or Russianization of most of the aboriginal peoples of northeast Asia.

Much of the material is now on display in the new Hall of Asian Peoples. Here visitors can see the common household objects of the Siberian cultures, including sleds, jugs, tea sets, toys, hats, embroidered furs, snowshoes, and crude skis. In addition, on display are shaman's rattles, burnt bones, kumiss vessels, and other ceremonial and religious material. The collection is unique: no one else ever thought to carefully gather, record, and study the language, myths, and material artifacts of some of Asia's most remote cultures.

Boas left in 1905, and the Museum turned its attention to the anthropology of the Americas. It wasn't until the early 1920s that the Museum once again looked to the East with great interest.



AMNH

Russian priest in deerskins at Gishiga, Siberia. At the turn of the century, Christianity was beginning to make inroads among the aborigines of northeast Asia. A section of the hall illustrates the Russianization of Siberia.

Exploring the Gobi

Roy Chapman Andrews began at the Museum scrubbing floors in the taxidermy department, and soon became curator of mammals. As a young and not terribly scientific mammalogist, he had a theory. The theory, which was enthusiastically supported by President Henry Fairfield Osborn, claimed that *Homo sapiens* had originated in central Asia, probably in Mongolia. The first civilizations of China, India, and the Near East, Andrews argued, formed a ring around central Asia which must, therefore, have been man's first home. Besides, what better place could there be for man's origin than the vast, windswept plains, empty deserts, and forbidding mountain ranges of the Gobi, the stronghold of Ghengis Khan?

Andrews was a tough, sunburnt man who packed a revolver and wore a cartridge belt around his waist. He managed to lead the expedition through all kinds of political difficulties; he used to tell obstructive Chinese border officials that if they didn't let him go through peacefully, he would shoot his way through.

With the support of Osborn, Andrews organized and led a series of expeditions to Asia known collectively as the "Third Asiatic Expeditions." In his search for primitive man (of which they found not a trace) Andrews discovered the first dinosaur eggs and numerous other fossils, new species of plants and animals, and mapped large areas of unknown terrain. Along the way they also discovered extensive evidence of a prehistoric culture in Mongolia, the Dune



Dwellers. They also collected and did fieldwork in a haphazard way among the Mongols and other warrior groups living beyond the Great Wall of China.

Andrews and his crew of archeologists, paleontologists, topographers, geologists, zoologists, photographers, and the rest established their base in Peking, and from there set out for the Great Wall and beyond in a series of expeditions that lasted, off and on, for a decade.

Dune Dweller Burials

On the first expedition in 1921, Andrews and company proceeded by train to Kalgan (Changkiakow) nestled next to the Great Wall. Here they loaded up their motor cars and began the trek across Inner Mongolia. Andrews kept a journal, which he rewrote for the following account of the journey:

"For seventy miles from Kalgan it is all the same — Chinese everywhere. The Great Wall was built to keep the Mongols out. By the same token it should have kept the Chinese in, but the rolling grassy sea of the vast plateau was too strong a temptation for the Chinese farmer. Encouraged by his own government, which knows the value of just such peaceful penetration, he pushes forward the lines of cultivation a dozen miles or so every year. As a result, the grassy hills have given place to fields of wheat, oats, millet, buckwheat, and potatoes.

"Beyond the area of agriculture we came to a region of long rich grass. When we came to our first Mongol village, I jumped out of the car to take a photograph but scrambled in again almost as quickly, for as soon as the motor had stopped, a dozen dogs dashed from the houses snarling and barking like a pack of wolves. They are huge brutes, these Mongol dogs, and as fierce as they are big. Every family and every caravan owns one or more. We learned very soon never to approach a Mongol encampment on foot. The animals are naturally savage and are a very real danger to life. My wife and I had the narrowest escape from death which we have ever had in all our travels from these same dogs, and more than once when we were on horseback we were attacked by the snarling brutes.

"A Mongol village is as unlike a Chinese settlement as it well can be. Instead of closely packed mud houses we found the Mongol habitation to be a circular latticed framework covered with felt, and with a cone-shaped roof. The yurt, as it is called, is perfectly adapted to the Mongolians and their life. In the winter a stove is placed in the center and the house is dry and warm. In the summer the felt covering is sometimes replaced by canvas which can be lifted on any side to allow free passage of the air. When it is time for the semiannual migration to new grazing grounds, the yurt is quickly dismantled, the framework collapsed, and the house packed on camels or carts."

As they pushed farther into the desert, they found more and more evidence of prehistoric (but not ancient) man in scattered dwelling sites and burials. Near the monastery of Baron Sog, Andrews wrote about discovering ancient Dune Dweller graves:

"On a gravel slope facing west were twenty or thirty piles of rock which indicated human work. They were in orderly arrangement and we were convinced that they must represent burials. It required considerable effort to remove the rocks, for some of them were huge slabs sunk several feet into the earth. Two graves were empty, but one produced interesting results. First, he encountered heavy timbers beautifully preserved; under these lay the perfect skeleton of a man. He must have been five feet ten or eleven inches tall. Beside him lay a birch bark quiver filled with arrows. Some of the shafts were of wood, others were partly of reed tipped with wood. The points were iron but the metal was badly corroded and in poor condition. The bow had separated into half a dozen pieces.

"To me the most interesting thing in the grave was a saddle, upon which the man's head was resting. He

Andrews greatly admired the Mongols for their "manly qualities." Here he is visited at his Gobi camp at Dah Ser Hai by a delegation from the Prince of Tsunni Khen. Andrews was recuperating from a gunshot wound.

AMNH

must have worn a turban, for bits of the cloth still adhered to the skull. The saddle was well-preserved, and when Nelson brought it to camp it proved to be a perfect McClellan type such as our army uses to-day. We had several with us, and the similarity was amazing. General McClellan without doubt thought that he had developed a new saddle, just as we supposed that we were the original discoverers of the dinosaur eggs. But in both cases primitive dwellers of Mongolia had made the discoveries centuries before we were born."

Some of the Dune Dweller artifacts, including the complete burial, saddle and all, are on display in the Hall of Asian Peoples. A much larger section of the hall is devoted to the Mongols, and includes ethnographic material Andrews collected.

The Third Asiatic Expedition was frequently interrupted by political conflicts and wars, which finally brought it to an end. (Andrews came close to being shot to death on more than one occasion.) Mongolia became closed to the West indefinitely.

With the end of the Third Asiatic Expedition, the "golden age" of Museum expeditions drew to a close. The Museum's Asian collections, however, would continue to grow. Small excursions by curators and friends of the Museum, purchases, and gifts would continue to augment the collection up to the present day.

The Later Collections

In 1942, Harry L. Shapiro became chairman of the Department of Anthropology, and a new era of Asian study and collecting began. Shapiro took a long hard look at the Museum's ethnographic collections, and determined where it was weak — Southeast Asia, Arabia, India, Turkey, Afghanistan and Iran, he found, were all poorly represented. Major expeditions like the Jesup and Andrews expeditions were out of the question, while the haphazard acquisition of material by gift and purchase was also unsatisfactory. "I was impressed," says Shapiro, who is now curator emeritus, "by the rapid disappearance of many of the world's traditional cultures. There wasn't much time left — perhaps a few decades."

With his department's now limited resources, he developed a plan. Whenever anthropologists went into the field to do research, Shapiro would call them up. Would they be willing to collect for the Museum? By carefully targeting specific areas of Asia, he was able to develop very fine collections in numerous areas. Some of the superb collections amassed in this way are the Dentan collection of Senoi-Samai artifacts from Malaysia, the Louis Dupree and Walter Fairervis, Jr., collection from Afghanistan, the Krader collection from Iran and the Kenan Enn collection from Turkey.

When the actual hall was being planned, scientific consultant Walter Fairervis, Jr., realized that there still were holes in the Museum's collection. These he was able to fill with gifts and purchases.

One of the most notable series of gifts for the new hall were the objects in the Armenian section. The Museum had little from Armenia, despite the fact that Armenia had been an important part of western Asia for some three thousand years. To fill in this gap, Fairervis asked the help of the Advisory Council for Armenian Studies at Columbia. For nearly three years, the Armenian Council, led by Eleanor Aco-pian Ordjanian, assembled a collection of traditional objects illustrating the Armenian way of life. Most of the objects came from donors who often parted with family heirlooms and other objects they had saved during their flight from the Ottoman Turks in 1915.

Here we have only touched upon the history of the formation of the Museum's Asian collection. It is a collection which could not be duplicated today. It is a priceless record of the traditional cultures of Asia before they were destroyed or changed by the modern era. And even more than that, it is a testament to the richness, the infinite variety, and the achievement of the human spirit.

Bringing Back Asia



Waldemar Jochelson and his wife were the first whites to cross the Stanovoi mountains, comprising some of the most forbidding geography in Siberia. After an extremely difficult journey, they descended to the upper reaches of the Korkodon river. Jochelson writes: "By this time our horses were exhausted. Meanwhile, the cold was increasing day by day, and haste was necessary if we were to reach Kolymsk before the closing of the river. Therefore I prepared to descend the river on a raft, hoping thus to reach a camp of the Yukaghir which is located on the course of the Korkodon. It took us a day to build a strong raft, and then we began the descent of the river, made dangerous by numerous rapids and short bends, by the rocky banks and by jams of driftwood. Our guides had intimated that we could make the descent in two days, but instead we spent nine days on the raft."



Motor cars carried the Third Asiatic Expedition itself, while camel caravans were used to carry water and provisions (Camels, more than anything else, thrilled Andrews' sense of adventure.) Here Andrews (left) and paleontologist Walter Granger show a flashlight to one of their Mongol water carriers. Andrews took great delight in showing the "wonders of western technology" to the Mongols. They were, to Andrews' disappointment, unimpressed.

The enormous size, forbidding terrain, and extreme climate of the Asian continent posed a challenge to Museum expeditions. The problem always was: How do we get where we want to go? They solved the problem in a number of ingenious ways, including travel by yak, cow, camel, dogsled, reindeer, motor car, boat, raft, and airplane. The archival photographs on this page illustrate a few of these unusual modes of transportation.

AMNH



AMNH



(Top) Like the natives of Siberia, Jochelson found reindeer and sleds were the best form of transportation. He wrote on the back of this photograph: "Mountain Verkhogausk, ascending of my reindeer teams."

(Bottom) Roy Chapman Andrews had the idea of exploring central Asia by motor car. The vast plains of the Gobi made such a means of transportation possible. However, as Andrews wrote, "Motoring on the Gobi is not quite like rolling down Fifth Avenue."

Evening Lecture Series

The fall program of the Adult Evening Lecture Series will begin in late October. The Education Department has planned a variety of subjects in anthropology, natural history, geology, botany, mineral identification, wilderness exploration, and wildlife drawing. Members receive a discount on series tickets. These courses were listed in the September Rotunda; please call 873-7507 for more information and ticket availability.

Asian Civilizations Walter A. Fairservis, Jr., scientific consultant for the new Hall of Asian Peoples, will give four richly il-

lustrated lectures on the cultures of the East. **Archeology Today** David Hurst Thomas, chairman and curator in the Department of Anthropology, will explore in four slide-illustrated lectures the world of archeology and the technical and theoretical breakthroughs the field has experienced over the last decade.

The Geology of New York New York's geologic history. Four lectures.

Sociobiology The controversial theory of human behavior. Six lectures.

Wildflowers of the North Wildflowers of the northern

mountains, coniferous forests, and wetlands. Six lectures. **Central Park New York's Remarkable Back Yard** Four lectures about Central Park with Park administrator Elizabeth Barlow.

Exploring American Wilderness Areas An introduction to the beautiful and diverse wilderness. Six richly illustrated lectures.

For more information about the Evening Lecture Series, call the Education Department at 873-7507. Course brochures with a preregistration form are available through the Education Department.

1980 Margaret Mead Film Festival

The 1980 Margaret Mead Film Festival will feature an eclectic series of programs, ethnographic films, and discussions with anthropologists the weekend of October 4 and 5.

Notable speakers this year include Jean Rouch, Cathenne Bateson (Mead's daughter), Karl Heider, Ray Birdwhistell, and others who will introduce and discuss the films.

Establishing diplomatic relations with the People's Republic of China opened that country to filmmakers from the West. Two programs on China will premiere four remarkable films and include discussions with the filmmakers. On Saturday, Tony Ianzelo and Boyce Richardson will introduce and discuss their films, *North China Commune*

and *North China Factory*. On Sunday, three Chinese-American filmmakers will show their films, *Suzhou* and *Beijing*. Through interviews, scenes of daily life, and portraits of workers in various collectives, we see how the economic, political and cultural changes of this century have transformed the lives of the people.

Film, Margaret Mead felt, is a powerful way of looking into another culture, especially if the filmmaker is a member of that culture. One program this year, *Perspectives on Iran*, features two Iranian films never before seen in the United States. The films will form the basis for a discussion of Iranian culture and values. Three speakers — Cathenne Bateson, William

Beeman (an anthropologist who lived in Iran throughout the recent revolution) and Bahman Maghsoudlou (an Iranian filmmaker) — will discuss the films and what they can teach us about Iran.

These are only two of the many programs in the 1980 Margaret Mead Film Festival. Other programs include the *Black Experience*, *New Films*, *Recent Landmarks*, *Film for Research and Teaching*, *Dogon Funeral Ceremony*, *Latin American Faith and Ritual*, *Dance-Drama in Java and Thailand*, and *Soviet Ballet*. Film programs, which were included in the September Rotunda, can be picked up in the Museum before or during the festival. All weekend festival films are free.

California Condor

An exhibit, *California Condor: A Species in Peril*, examining the threat to this rare bird and the efforts to save it, is in the Roosevelt Rotunda through October 15.

This exhibition includes a mounted California condor and photographs of this impressive bird in its habitat. It also looks at the major threats to this fascinating creature: environmental poisoning, which leads to a gradual thinning of the bird's egg shells, a low reproductive rate, (the condor breeds suc-

cessfully only once every other year), and urbanization and agricultural development.

There are only about 30 adults left, and each year only

two chicks survive to adulthood. The exhibition illustrates the radical and controversial steps being taken to save this bird.



The California Condor in its native habitat. An exhibit on the efforts to save this rare bird is currently on display in the Roosevelt Rotunda.

AMNH

Color the Monkey-King

Actors and puppets in China often have painted faces. The color and design on the face tells you about the kind of character it is. For example, black means good, red means honest, white means dishonest, and green means that the character is a supernatural spirit. The tradition of face painting began long ago when King Lan Lin wore a mask in battle to frighten his enemies.

Pictured below is the face of Sun Wu Kung, the supernatural Monkey King. Many plays have been put on that describe his adventures. In one play, he joins a monk on a trek to India and overcomes 81 dangers and demons along the way. With his magic club, he can defeat any enemy. He always wears a yellow silk costume and a cap with a pom-pom.

Using the color code below, color in the face.

R — red
Bk — black
Pk — pink



Monkey King
T'ang Dynasty (7th Century A.D.)

This children's section was adapted from a coloring book produced by the Asia Society's Performing Arts Program

Museum Notes

Sometime in the future the world will end. Whether it will be by the extinction of the sun, a giant meteorite or comet (as in this artist's conception) or nuclear Armageddon, is open to debate. The Hayden Planetarium's new sky show, *The End of the World*, takes a dramatic look at some of the latest theories. *The End of the World* closes November 24.



Hayden Planetarium

New Exhibitions

California Condor: A Species in Peril. (Roosevelt Rotunda, second floor.) Through October 15. (Article page 9.)

The Gardner D. Stout Hall of Asian Peoples Opens October 17. The Museum's newest permanent exhibition hall, containing over 3,000 works of art and artifacts. (Articles pages 1, 5, 6, 7, and 8.)

Books on Asia. (Library Gallery, fourth floor.) Opens mid-October. A selection of rare books used to research the new Hall of Asian Peoples.

Action at Mount St. Helens: Recent Eruptions and the Geology Behind Them (Roosevelt Rotunda, second floor.) Ongoing. An in-depth look at the eruptions of Mount St. Helens is presented in an exhibition of photos and videotape.

Natural History magazine Photo Contest Winners Center Gallery (next to the People Center)

Programs and Tours

People Center. Opens October 18. Ethnic programs featuring dance, music, films, lectures, and workshops are presented in the People Center every weekend from 1:00 to 4:30 p.m. Refer to the calendar on page 12 for specific events.

Natural Science Center The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and

handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

The End of the World is the sky show at the Hayden Planetarium through November 24. Sometime in the future the world will end. How it will end — whether by the death of the sun, collision with an asteroid, the coming of a new ice-age, or nuclear Armageddon — is open to debate. *The End of the World* takes a dramatic look at the current theories.

Sky show times:
Weekdays: 1:00 and 3:00 p.m.

Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices,

please call 873-8828 or 873-8829.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 per cent discount on ticket prices.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Worlds in Space. Wednesday, 7:30 p.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays. 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Saturday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:15 p.m. Sunday: 11:30 a.m. to 4:30 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check room is located in the basement next to the cafeteria. There is a charge of 40¢ per coat.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852

Southwestern Research Station, Portal, Arizona, 85632.

Sat

Fri

Thu

Wed

Tue

Mon

Sun

October

4 1980 Margaret Mead Film Festival. Continuous programs of ethnographic film, discussions with filmmakers and anthropologists. Free. (See article page 9 and film program in the September Rotunda.)
11:00 a.m. New York Map Society, Room 129 Free

3

2 2:00 p.m. Introducing the *Animal World* Gallery talk with J. Munoz. Assemble at first floor Information Desk. Free
7:30 p.m. Two Evenings with Filmmakers *David and Judith MacDougall*. Auditorium. (See October 1.)

The Planets. Art exhibition at the Hayden Planetarium opens.

1 7:30 p.m. Two Evenings with Filmmakers *David and Judith MacDougall*. Auditorium \$8 for Members, \$10 for non-members for both evenings (See October 2.) Call 873-1070 for more information.



10

9 2:00 p.m. Baskets from the Museum's Collections Gallery talk with Phyllis Mandel. Assemble at the first floor Information Desk. Free
5:30 p.m. New York Audubon Society, Education Hall. Free.

8 5:30 to 8:30 p.m. Members' Preview of the New Hall of Asian Peoples. Open to Participating, Donor, and Elected Members whose last names begin with A-M. Membership card admits two adults and four children.
7:30 p.m. New York Mineralogical Society, Education Hall. Free.

7 2:00 p.m. The Eskimo. Gallery talk with Paul Sanfaçon. Assemble at first floor Information Desk. Free



5 1980 Margaret Mead Film Festival. Continuous programs of ethnographic film, discussions with filmmakers and anthropologists. Free. (See film program in the September Rotunda and article page 9.)

12

18 1:00 to 4:30 p.m. India Live dance, music, crafts of India. People Center. Free.
2:00 p.m. India Films Auditorium. Free. (See article page 5.)

17 Grand opening to the public of the new Gardner D. Stout Hall of Asian Peoples. Over 3,000 objects displayed in 20,000 square feet cover the many cultures of Asia (See special insert page 5, 6, 7, and 8, and September issue of *Natural History*)

16 2:00 p.m. Mammals of North America. Gallery talk with R. Aylward. Assemble at first floor Information Desk. Free

First quarter (half moon)

15 5:30 p.m. to 8:30 p.m. Members' Preview of the New Hall of Asian Peoples. Open to Participating, Donor, and Elected Members whose last names begin with N-Z.
6:00 p.m. Shamans of the Blind Country Epic film on Nepal. Auditorium. Free (Article page 5)

14 2:00 p.m. Plants of the Wetlands. Gallery talk with Helmut Schiller. Assemble at first floor Information Desk. Free
8:00 p.m. Linnaean Society, Education Hall. Free

20

19 12:45 p.m. American Cetacean Society, Room 319 Free
1:00 to 4:30 p.m. India Live programs of dance, music, crafts of India. People Center. Free
2:00 p.m. India Films. Auditorium. Free. (See article page 5)
2:00 p.m. N.Y. Turtle and Tortoise Society, Room 129 N.Y. Paleontological Society, Room 426 Both free

24

23 2:00 p.m. Indians of the Plains. Gallery talk with Paul Sanfaçon. Assemble at first floor Information Desk. Free

Full moon

25 1:00 to 4:30 p.m. Japan Live programs of music, dance, crafts, and food preparation from Japan. People Center. Free
2:00 p.m. Japan Films. Two John Nathan films, *Full Moon Lunch* and *Farm Song*. Auditorium. Free
Battery Park Tour with Sidney Horenstein. By reservation only (Article page 4)

27

26 11:00 a.m., 1:30 p.m., 3:30 p.m. Ghost Stories Around the World. Members' program with Laura Simms and Jackie Torrence. Education Hall. Free for members, \$3.00 for non-members. (Article page 2.)
1:00 to 4:30 p.m. Japan. People Center. Free. (See Oct. 25)
2:00 p.m. Japan Films. Auditorium. Free. (See Oct. 25)

31 Profiles of the Past: Geology of Three Southwest Canyons Major exhibition on the Bryce, Zion, and Grand Canyons. Gallery 77 (Look for details in the November Rotunda)

30 2:00 p.m. What is Ecology? Gallery talk with Helmut Schiller. Assemble at first floor Information Desk. Free

Last quarter (half moon)

29 7:00 p.m. *Indrani and Sukanya: Classical Indian Dances.* Auditorium. Tickets will be given out free near first floor Information Desk beginning at 5:00 p.m. No reservations accepted. (Article page 5.)

28 2:00 p.m. Mammals of Africa. Gallery talk with R. Aylward. Assemble at first floor Information Desk. Free
8:00 p.m. Linnaean Society, Education Hall. Met Grotto National Speleological Society. Room 129. Both free

American Museum of Natural History

EXPERIENCE THE MIRACLE...

at the American Museum
of Natural History

In 1935, the poet e.e. cummings wrote to a friend in Europe: "There is a miracle in NYCity. This miracle is worth your travelling to NYCity. This miracle is a 'natural' history museum . . ."

The American Museum of Natural History is a treasure house filled with once-in-a-lifetime experiences. A visit can mean standing eye to eye with an Olmec god or eye to knee with Tyrannosaurus Rex. It can mean walking by an elephant stampede or touching the largest topaz crystal in the world.

Membership in the Museum gives you a chance to experience the "miracle," to delve into the intricacies of nature and the variety of human cultures. And, as a Member, you will be helping to support the vital scientific and educational programs that have made the Museum one of the world's foremost research institutions.

Here's what you will be giving to yourself and your family (or a friend) if you join the Museum:

Rotunda, the Museum's newsletter delivered to your home ten times a year, with advance notice of all programs and events.

Natural History magazine, 12 issues filled with stunning photography and fascinating articles about the natural world.

Free admission to the Museum at all times for a whole family, or two adults and four children.

Invitations to special previews, private viewings, and social events celebrating the opening of new halls and major exhibitions.

Free films and lectures every month, given by anthropologists, naturalists, scientists, filmmakers, writers, and others who will challenge you with their ideas and fascinate you with their knowledge.

Free weekend programs and workshops for your family.

Large discounts at all Museum and Planetarium shops.

Large discounts for Museum and Planetarium courses, evening lecture series, and film series.

Special prices on tickets to many events.

Invitations to Behind-the-Scenes tours of the Museum's scientific departments and research labs, where you will meet curators and scientists.

Visiting privileges to the elegant Members' Reception Lounge.

Visiting privileges to Museum field stations in Florida and Arizona.



Yes! I would like to become a Member of the Museum and receive *Natural History* magazine, *Rotunda*, and all the benefits listed above:

- ☐ \$30 Participating Membership (a family/dual membership)
- ☐ \$50 Donor Membership
- ☐ \$100 Donor Membership (Donor Membership has the same benefits as Participating, plus recognition of having made a significant contribution to the Museum)

Name: _____ (Please print clearly)

Address: _____

City: _____ State: _____ Zip: _____ H804

Please make check out to the American Museum of Natural History and mail to: Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please allow six to eight weeks to receive your first copy of *Natural History* magazine.

DOTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History | Vol 4, No 9 November 1980

Raymond A. Mendez



Amphibian and Reptile Day

Sunday, November 23 is *Members' Amphibian and Reptile Day*. Members venturing into Gallery 3 will see living and mounted specimens of animals whose ancestors roamed the Earth 300 million years ago. There will be 9-inch giant toads from Sunnam, box turtles, wood turtles, lizards, fox snakes, a boa constrictor, leopard frogs and a frog that carries its eggs on its back. You will be able to touch a turtle skull, shake a rattlesnake's rattle, listen to the bullfrog's call and draw your favorite reptile on our reptile-o-scape.

Scientists from the Museum's Department of Herpetology will be on

hand to discuss the natural history of amphibians and reptiles and answer any questions you may have. They will show you the research the department is doing on an all-female species of lizard and the color patterns of king snakes. They will also demonstrate the use of snake hooks, lizard nooses and turtle traps and explain how scientists from around the world use the Museum's collection of a quarter of a million specimens.

We hope you will join us for what promises to be a fascinating look at some of the world's strangest creatures. The program will be held from

While this giant tree frog from Trinidad will not be able to make it to Membership's Amphibian and Reptile day, November 23, a giant toad from Sunnam, and a host of frogs, lizards, snakes and turtles will be there.

noon to 4:30 p.m. on Sunday, November 23 in Gallery 3. Gallery 3 is located on the third floor right off the Hall of Reptiles and Amphibians. The program is free to Members and \$3.00 for non-members. Your membership card is your ticket of admission. No reservations are necessary.

Smoochers and Shmoozers

How do New Yorkers behave in the city's streets, plazas, and parks? William Whyte studied the outdoor activities of New Yorkers for ten years. He will tell you all about your self at the November Members' program.

Page 2

Paper Whales, Flapping Birds

Fold a whale, a flapping bird, and a host of exotic and mundane animals at the 1980 Origami Workshop.

Page 3

Time and the River

A new exhibition in Gallery 77 looks at the Grand Canyon, Bryce Canyon, and Zion Canyon. With fossils, rocks, maps, and 800 square feet of photographs, the exhibition tells the 2½-billion-year history written on the canyons' rocks.

Page 4

Following Tsessebe in Paradise

A Museum curator writes about his trip to the wilds of the Kalahari desert in Africa to study the tsessebe, a kind of antelope.

Page 5

Urban Activity

New York is a people watcher's paradise. Stop by a street corner in East Harlem or along a Plaza on Sixth Avenue and you will see sunbathers, stoop sitters, hot dog vendors, street musicians, smoochers and "shmoozers" (those engaged in idle conversation), and a host of other people doing a myriad of activities.

William Whyte, director of New York City's Street Life Project, has been watching people and studying the way they behave in urban spaces for the past ten years. He will discuss the fascinating and often surprising results of his study at our November Members' Program, the *Natural History of Urban Spaces*, on Wednesday, November 12, at 7.30 p.m. in the Auditorium.

Mr. Whyte will use films and remarkable time-lapse photography to illustrate the way people interact with their urban environment. He will explain why some urban spaces are teeming with people and activity, while other spaces have become concrete deserts. He will

discuss the entertaining but often subtle social rituals that are practiced in New York streets, why people sit, stand and walk where they do, and how the behavior of New Yorkers compares with that of their big-city counterparts around the world.

Mr. Whyte has served on many environmental commissions and written numerous articles on the urban environment, one of which appeared in the August 1980 issue of *Natural History* magazine.

This program is free to Members and \$3.50 for non-members. Coffee will be served prior to the program.

How do people use space in the city? The nature of the space will often determine its use. William Whyte, who studied the way people use city plazas, parks, and streets for ten years, will discuss his findings and show a film about his project for the November Members program.



William Whyte

Members' Memo

I have in front of me a "fact sheet" about the Museum compiled by our Department of Public Affairs. Listen to these figures about our collections: "The Museum possesses 34,000,000 specimens, including 15,100,000 insects, 8,000,000 anthropological artifacts, 8,500,000 fossil invertebrates, 1,000,000 birds, 400,000 fish, 330,000 fossil vertebrates" and so on. According to this sheet, we have the largest collections of birds, spiders, whale bones, and fossil mammals in the world.

The collection is, undoubtedly, the living heart of the Museum. Although the research, exhibition, and educational aspects of the Museum are of vital importance, it is from the collections that these other activities ultimately draw their lifeblood.

The storage and preservation of the collections have always been a major concern of the Museum. It would be no exaggeration to say that nearly every available square foot of storage space is crammed with specimens, from the world's largest meteorite to the world's smallest bee. Each collection poses its own peculiar problems of storage and care, a dragonfly, after all, is quite different from a brontosaurus rib.

One of my most fascinating experiences in the Museum was exploring some of the storage rooms, vaults, and preparation areas. My first tour was of the dinosaur bone storage rooms; to get there, my guide led me through a maze of dim under-

ground passageways lined with rumbling steam pipes to an ancient padlocked door.

Here I found something quite different from the polished, articulated skeletons in the dinosaur halls: here were literally thousands of bones stacked on heavy metal shelves reaching to the ceiling. The smaller bones were kept in cans, but the larger ones sat on the shelves in the open air or covered with plastic sheets. I could see plaques with twisted skeletons imbedded in them, slabs of fossilized footprints in mudstone and shale, six-foot femurs stacked up like cordwood, hundreds of massive vertebrae, and other fantastic shapes stretching the length and breadth of this enormous room.

Caring for the bones is fairly simple. Since they are usually mineralized, and thus inert, they don't require air-conditioning, cleaning, or an insect-free environment. Each bone is numbered and backed up by detailed and exact information, such as where it was found, in what geological formation, in what position, with what other bones, and so forth. The skeletons are much easier to study disarticulated, which is how they remain in storage.

Across the hall is a crate storage room, the bulk of which has never been opened up. Most were collected by curators in the 1920s and 30s and are still in the original plaster-encased matrix. Unfortunately, a fire many years ago destroyed the scientific information that accompanied many of these

bones, so they are almost useless from a scientific point of view. The Museum hopes to trade them or give them away to other museums that might want them for exhibition purposes. Otherwise, one curator says, "we'd get rid of them if it wouldn't be so much trouble." Also in this room are stored some of the famous dinosaur eggs that Roy Chapman Andrews brought back from the Gobi desert.

The dinosaur bones are only a small part of the vertebrate paleontology collection. There are also seven floors of fossil mammals (the largest collection in the world, donated to the Museum by Childs Frick) a fossil fish storage room, and other scattered collections.

The vertebrate paleontology collection is hardly just an attic of dusty bones; it is constantly growing, changing, and yielding new and important information about the natural world and the evolution of life. Last year, for example, curators in the Department of Vertebrate Paleontology published over 40 scientific articles based on the collection, and hundreds more papers were published by outside scientists who either studied the collection in the Museum or studied specimens loaned to them by the Museum.

Douglas Preston

ROTUNDA

ISSN 0194-6110

Vol. 4, No. 9
November 1980

Kate Bennett-Mendez — Manager of Membership Services
Douglas J. Preston — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
Mark Abraham — Copy Editor
Kathy Li Donni — Writing Intern
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1980 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

Raymond A. Mendel



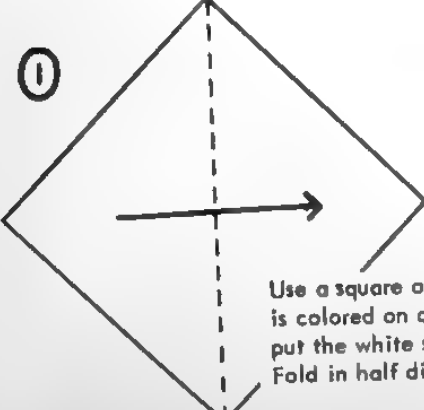
Red-eyed tree frog

The Origami Whale and Other Natural History Paper Folds

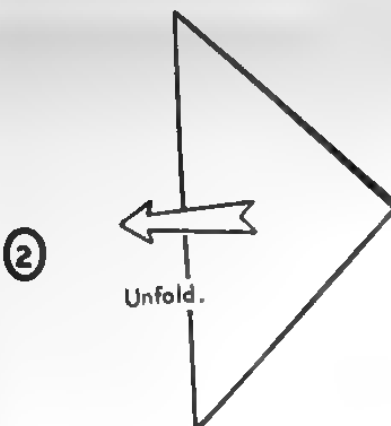
Can you fold the whale diagrammed on this page? Try it and then come to Membership's Third Annual Origami Workshop on Saturday, December 6 in the Education Hall. The art of Origami developed in Asia perhaps 1,000 years ago. To celebrate the opening of the Hall of Asian Peoples, this year's workshop will feature classic Asian paperfolds. Members will learn how to magically transform squares of paper into swans, butterflies, black-and-white pandas, a star basket and a traditional water bomb. Advanced folders will create blow-up frogs, lilies, and the flapping bird. The workshops will be taught by Alice Gray and Michael Shall with the assistance of Museum volunteers and The Friends of the Origami Center of America. These are the same people who create the beautiful Origami Holiday Tree that is on display in the Museum every winter.

To register, please fill out the adjacent coupon. The workshop is open only to Participating, Donor, and Elected Members of the Museum. This workshop always fills up rapidly so early registration is advised.

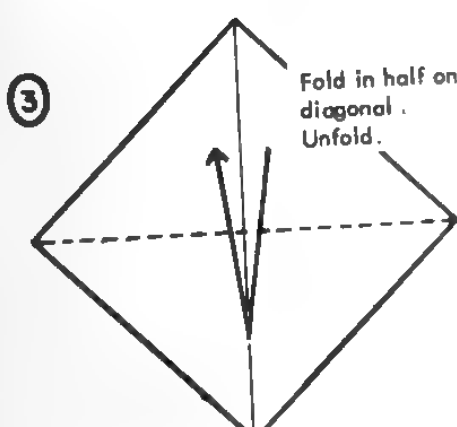
WHALE



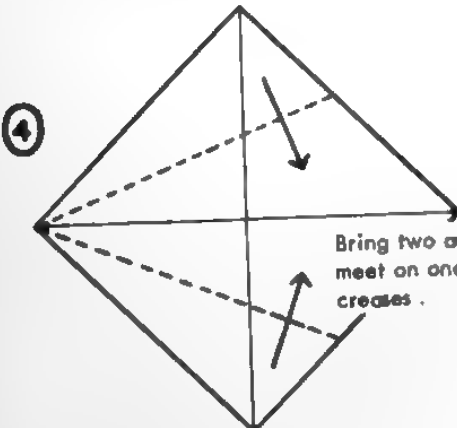
Use a square of paper. If it is colored on one side only, put the white side up. Fold in half diagonally.



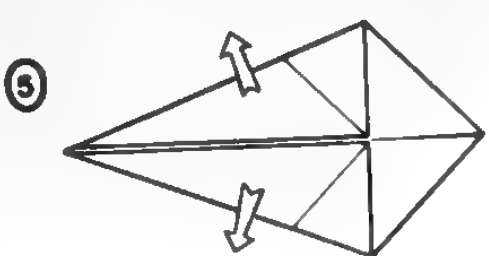
Unfold.



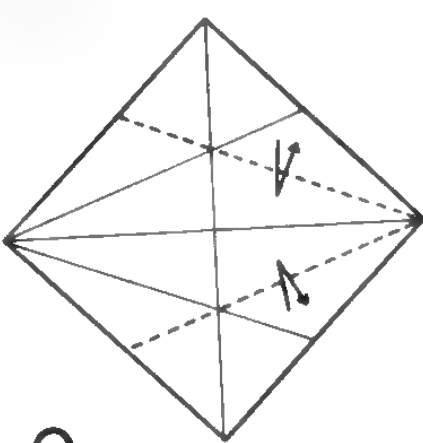
Fold in half on the other diagonal. Unfold.



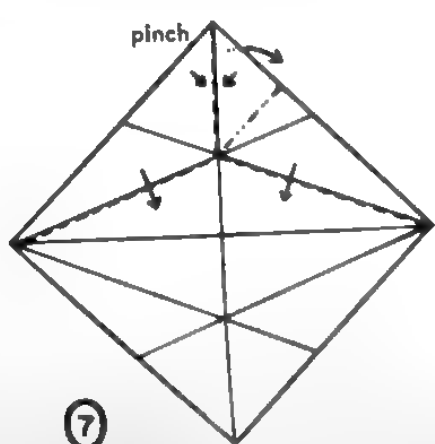
Bring two adjacent edges to meet on one of the diagonal creases.



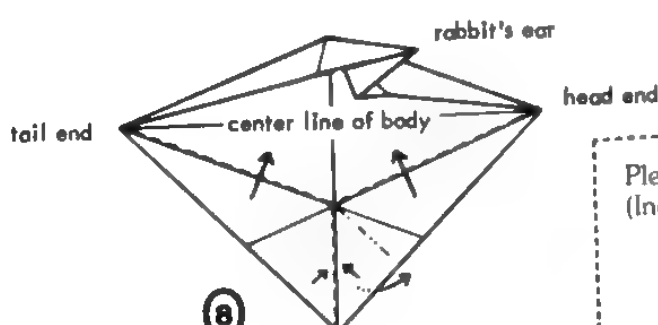
Folders call this an "ice cream cone." Unfold.



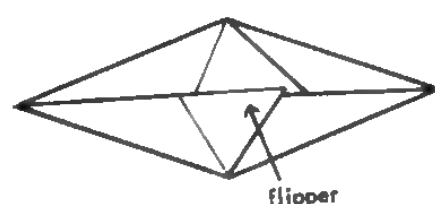
Make an ice cream cone from the other end of the same diagonal. Unfold again.



Using creases you already have, fold both edges on one side of the body to the center line at the same time. Extra paper will stand up between them in a little flap that folders call a "rabbit's ear." Pinch the sides of the ear together from the tip and press it down flat, pointing toward the head end. It will become one flipper of the whale.

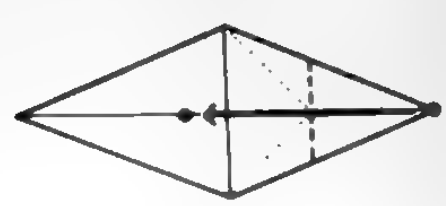


Repeat step 7 on the other side of the body.

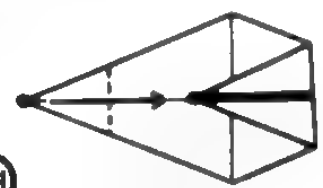


Both flippers should point toward the head end.

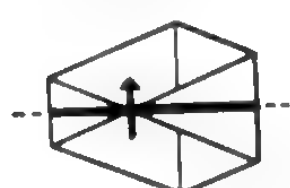
Turn over.



Bring the head end point toward the tail end so that the new fold just touches the tips of the flippers underneath.



Bring the tail end point to meet the head end one.



Fold body in half lengthwise.



Fold both flippers back so that the tips hang down.



Keep the head end pinched shut. Reach inside the tail end from the top and pull up the tail. Press flat.



FINISHED WHALE

Copyright 1980 — The Friends of the Origami Center of America

Please register me for the Origami Workshop marked below (Indicate a first and second choice of times)

- 10:30 a.m.
- 11:30 a.m.
- 1:30 p.m.
- 2:30 p.m.
- 3:30 p.m.

There will be an overflow workshop at 12:30 p.m. if the other workshops are filled. Please check this space if you could attend this workshop.

Number of People

I would like to join the advanced group (I can fold the classic flapping bird)

Name:

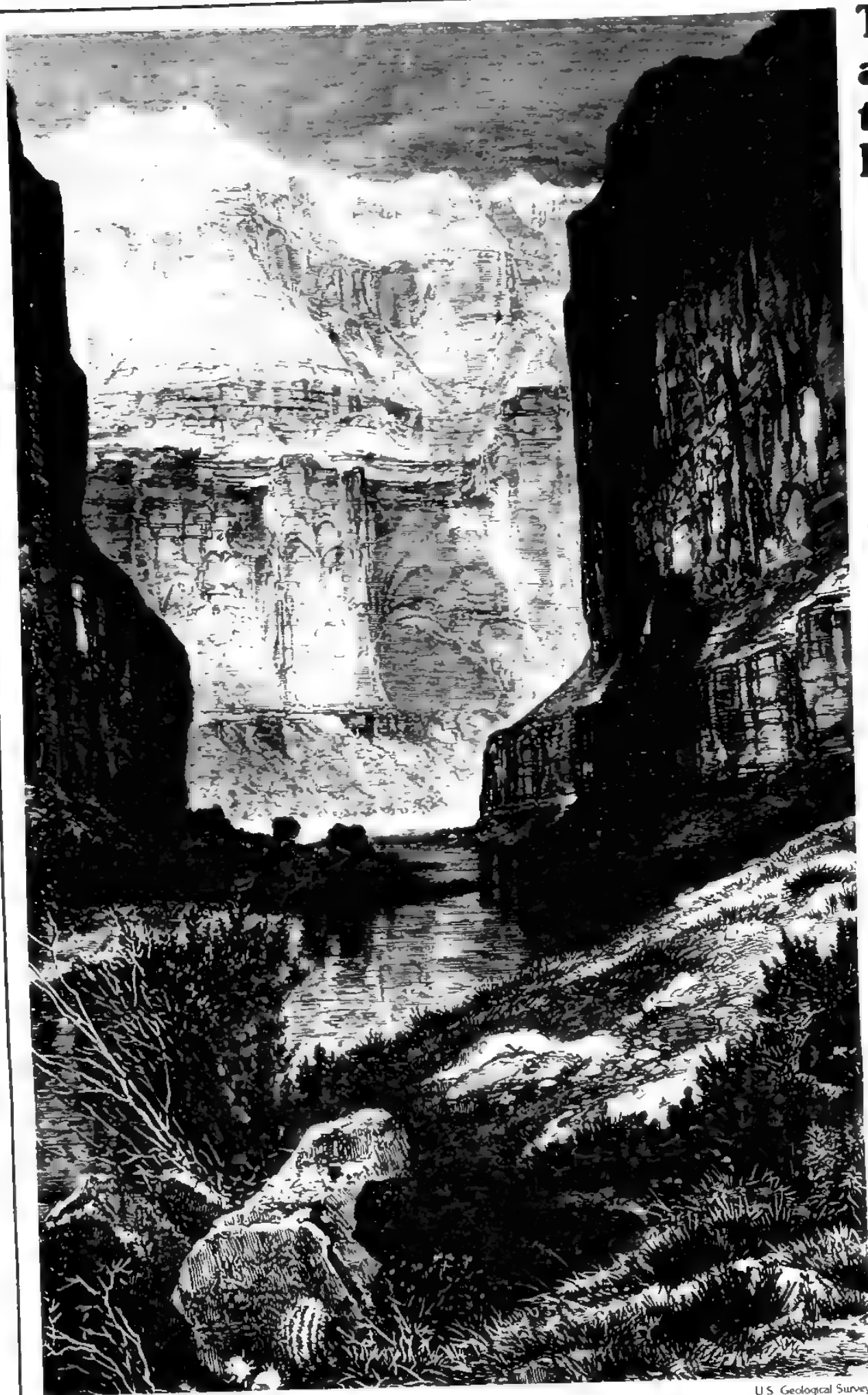
Address:

City: _____ State: _____ Zip: _____

Membership category

(This workshop is open only to Participating, Donor, and Elected Members of the Museum)

Please mail application and self-addressed, stamped envelope to: Origami Workshop Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. After November 23, please call 873-1327 for reservation information



Time and the River

An exhibition on the geology of the Grand Canyon, Zion Canyon, and Bryce Canyon is currently in Gallery 77. *Profiles of the Past: The Geology of Three Southwest Canyons* explores the geologic history of the canyons and traces the development of life through the fossil evidence in the canyons' walls.

The three canyons have a very special relationship: the layers of rock they cut through can be connected to form a complete sequence of events spanning 2 billion years. The bottom layer of Bryce, for example, is the top layer of Zion, and the bottom layer of Zion is the top layer of the Grand Canyon. By studying the canyons' walls, geologists can "read" in the sediments both the history of the rocks and the development of life on the planet.

The central feature of *Profiles of the Past* are three gigantic photographs — one per canyon — each measuring 8 feet by 36 feet. They give the visitor the feeling of walking along the

rims of each canyon, while taking a journey back in time as each succeeding canyon cuts deeper into the layers of rock. Geologists have found all kinds of sedimentary deposits in the canyons, including marine deposits, sand dunes, river deltas, mud flats, lakes, coral reefs, alluvial and flood plain deposits.

The exhibition begins with Bryce Canyon, whose sedimentary layers were laid down in Cenozoic times beginning about 40 million years ago. Fossils from the canyon's walls illustrate the life of the period, and include turtles, small mammals, and freshwater clams. Farther on, the visitor comes to Zion Canyon which cuts through Mesozoic rock deposited during the age of dinosaurs. Footprints of dinosaurs are displayed with the fossils of other Mesozoic life. And finally, the oldest of the three, the Grand Canyon, whose primitive fossils include trilobites, ammonites, ferns, corals, and snails. At the bottom of the Grand Canyon is the ancient Vishnu schist, a dark folded rock that was deposited over 1 billion years before multicellular life had developed on the earth.

A scale model of the Grand Canyon, on loan from the Boston Museum of Science, will also be displayed with drawings, maps, and other informative and illustrative material.

The Marble Gorge in the Grand Canyon appeared this way to a U.S. Geological Survey artist. An exhibition, Profiles of the Past, explores the geology of the Grand Canyon, Bryce Canyon, and Zion Canyon.

U.S. Geological Survey

Flying Fantasies

An exhibit of colorful photographs of butterflies and moths will go on display in the Akeley Gallery on Thursday, November 6.

Kjell Sandved, a natural history photographer with the Smithsonian Institution, has created a series of detailed, close-up photographs of these insects, revealing the stunning coloration and complex patterning in both the adult and larval stages. We can see how different species use color to different ends — to mimic, to confuse and frighten, or to camouflage.

The exhibit is on loan from the Smithsonian Institution Traveling Exhibition Service.

A photograph of *Sosxetra gratao*, one of many color photographs of butterflies and moths on display in the Akeley Gallery.



At Camp in the Kalahari

By Richard G. Van Gelder

Curator, Department of Mammalogy
Incapacitated by malaria for two years, curator of mammals Richard G. Van Gelder reminisces about one of his research trips to Botswana, Africa

Savuti, Botswana, Africa.

To get here you board a 747 at Kennedy in the evening and, after seventeen hours with but a brief stop and a tepid beer in the dismal hours at Isla da Sal, Cape Verde Islands, you're in Johannesburg, South Africa. When the alarm goes off at five the next morning at the Holiday Inn at Jan Smuts Airport (when it is really 11:00 p.m. the night before in your internal clock), until you see the Afrikaans Bible, you could just as easily be in Toledo, Billings, or Augusta.

At dawn you board an Air Botswana Viscount to Gaberones on the border between South Africa and Botswana. You clear customs again, and two hours by twin-engine, nine-passenger plane across the Kalahari takes you to Maun, Botswana, a parched airstrip, yet still an international arrival station. You seek out the customs man, bumming a ride a mile into town from a hunter friend, to try to get your visa extended for the full month, only to be told to come back in three weeks.

Back at Maun International you settle into the co-pilot's seat of a single-engine Centurion for the last hour's run up the edge of the Okavango swamp in northwest Botswana, until you see the rocky outcroppings and the glint of a stream that mark the Savuti. Over a bend in the stream you swoop to the acacia tops, bank up and away, and then come around for a second pass. This time you see a spurt of dust from behind one of the Land Rovers next to the green tent and an arm waving out the window of the cab, so you stay low and head for the airstrip, three miles away. You make a pass at fifty feet, off to one side, watching for ruts and animals; there are none, so you come around again and touch down in a cloud of dust. It is 41 hours from New York's September weather, and the 130-degree Kalahari heat bakes into your body until you feel it in your bones. You sit on your lone suitcase, camera bag on your knees, in the shade of the plane's wing. The brush around the strip is pale and leafless, looking brittle and dead, and even the blue of the sky is whitened with the omnipresent dry-season smoke. In the sand between your feet is the paw-print of a spotted hyena. A low rumble comes from down the rutted, sandy road, and the rising plume of dust tells you that Dirk and the Rover are almost here.

Fifteen minutes later the Rover jerks to a stop behind the big dining tent. A half-dozen self-conscious Tswana

emerge and greet you with shy smiles or stoic ferocity, and limp handshakes. One grabs your suitcase, another the camera bag — the first time you have trusted it to other hands in two days — and you follow to a green tent.

The warm beer and the tinned corned beef confirm that the chronically ailing kerosene freezer is now terminal. Still, the beer is cooler than the 115 degrees your thermometer records in the tent, but it is going to be a long month of no fresh meat, no ice, and a monotony of canned vegetables and fruit. Dirk brings you up to date on his conquests of the past year, his hopes for the current one, and the local gossip, and you remember that it is not only the food that will be dull. You push back your chair, light a cigarette, and note that the smoke is exactly the same color as the sky. Your watch shows 2 o'clock, and you subtract six hours and realize that it is only 8 a.m. in New York and that the people you left behind at the Museum on Friday are just leaving for work, while here you are at Savuti. And you grin.

God threw Adam and Eve out of Eden, and why he let me in, I'll never know, for Savuti is surely Paradise, freezer or no. Where it is less important than what it is: a little world untrammelled by human beings, where elephants wander into camp at noon to pick up acacia pods, where a nightly leopard shivers your tent walls with his coarse rasps, where hippos snort the night away, and hyenas gnaw the ailerons of the parked plane. It is where I know 43 lions by their first names, or at least by their muzzle spots, and giraffes by their blotches. It is an oasis in the desert, a great marsh in the Mohabe Depression of the Kalahari. The Savuti is where no humans live, only transient Bushmen of a bygone day have left their marks — paintings of animals — halfway up on a few rock outcrops.

We leave at dawn, chilled in the heatless sun that pushes up through the smoke-haze like a balloon. The Rover's diesel growls sullenly. We have taken off the cab, preferring increased visibility to safety, both of which I became more aware of the day the lioness decided to join us on the front seat. A herd of kudu stands in the shadow of a hill, eight females and a male with magnificent horns who doesn't know that the book says he should be in a male herd at this time of the year. We watch each other out of sight.

It is forty minutes before we see our first tsessebe, the antelope I have come 10,000

miles to study. It looks like an artist's mistake — too high at the shoulder, too sloping of back, too long of face, too wispy of tail — that was printed out of register, with purple blotches on hips and shoulders against a chestnut background. Its horns seem to have been corrected mid-stroke. There are twelve in the herd, and I look them over carefully with my binoculars. I can tell the yearlings by their smaller size and slightly yellowish color, and sometimes I think I can spot the two-year-olds, but never with certainty. Even the males are hard to tell from the females. The book says that there is a third of an inch difference in the diameter of the horns, on the average, between the two sexes. The book isn't eighty meters away. "0640. Tsessebe to E of road, 0.5 km S old airport road jct. in tall grass, heads down. No wind, cloudless, air temp 19.5. 12 in herd, at least 1 yrling. Can't see male. Moving deeper into marsh, out of sight in tall grass 0647. We continue S."

Most of my notes are repeats of the above, with different times, places, and numbers. Tsessebe are dull, and I see few social interactions. I take to counting numbers of chews per cud — could there be a correlation with age? Old animals would have more worn teeth and have to chew more.

I watch the soaring vultures,

and when some start a rapid descent we drive south until we find the kill. A lion, one that I don't recognize and assume is a stranger to the area, has just killed a buffalo. He is skulking off, uneasy at the brazen clan of hyenas that have appropriated his prey. Soon there are forty-six hyenas, doubtless from two clans, disputing the buffalo which lies on the territorial borders of both clans. In fifty-five minutes only a dark, damp spot remains on the ground, and even the waiting jackals are disappointed, to say nothing of a tree-full of vultures.

At noon we turn off the road and head for the Savuti channel. We leave the Rover and walk silently to the water's edge. The "Old Boy's Club" — six bull elephants — have come down for a swim and frolic, shedding their cumbersome dignity as they squirt, splash, duck, hose, snorkel, and mount one another for a half hour. Then they emerge, and once more don their gray suits of dust and sand, and amble off in their baggy-pants way.

The sun is still high when it sinks out of sight behind the smoke haze, and it is dark when we get back to camp. I drink lemon squash for a half-hour, by which time a shower-bucket has been raised in a tree and the water has cooled to my liking. Fresh clothes that have been washed in the Savuti, sun-dried on a bush, and pressed with a charcoal-filled iron are laid out on my cot. I label the day's film and note-tapes by flashlight, and then

wander to the dining tent. A hyena whoops nearby, and, far off, a lion roars and grunts.

I refuse the hot soup, although I know it is the tastiest course, and settle for corned beef hash, canned peas, and canned string beans. Paoli, the cook, personally places before me the dessert he has made especially in my honor. Paoli must be nearly eighty — he served with the British Army in Kenya in World War I and in Burma in World War II — and is the most active man in camp. I stare at the rectangular sheet of baked dough, with a small, flattened bulge in the center. "Up papigh," he murmurs, beaming, as he offers a small pitcher of condensed milk. I then realize that he has made, from the single wrinkled apple I had seen on the table at noon, a 10 x 14 inch apple pie for me. I am ecstatic.

I sit outside by the hardwood fire with my tea. Dirk has gone to his tent and his collection of pornographic literature. My ears tell me that the splashing at the water's edge is a waterbuck, that the squabbling in the tree overhead are doves, and that the croaking from the stream are catfish. On the other bank the baboons are having their nightly arguments over roosting sites. The leopard that lives near camp will probably go for them tonight. I yawn. It is 9:15 p.m. I will get up at 4:00 a.m. to write notes for an hour or two, and then another day in Eden.

Then I remember that apple, and I worry.



Lisa Donnelly

Museum Notes

New Exhibitions

The Gardner D. Stout Hall of Asian Peoples. The Museum's newest permanent exhibition hall, containing over 3,000 works of art and artifacts.

Profiles of the Past: The Geology of Three Southwest Canyons. (Gallery 77, first floor.) Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand Canyon, Bryce Canyon, and Zion Canyon. (Article page 4.)

Flying Fantasies: Butterflies and Moths. (Akeley Gallery, second floor.) Opens November 6. Photographs of butterflies and moths: their life cycles, coloration, and beauty. (Article page 4.)

Books on Asia. (Library Gallery, fourth floor.) A selection of rare books used to research the new Hall of Asian Peoples.

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented in the People Center every weekend from 1:00 to 4:30 p.m. Refer to the calendar on page 8 for specific events.

Natural Science Center The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from noon to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries,

write to Discovery Tours at the Museum or call 873-1440

Planetarium Events

The End of the World is the sky show at the Hayden Planetarium through November 24. Sometime in the future the world will end. How it will end — whether by the death of the sun, collision with an asteroid, the coming of a new ice-age, or nuclear Armageddon — is open to debate. *The End of the World* takes a dramatic look at the current theories.

Sky show times:
Weekdays: 2:00 and 3:30 p.m.
Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828 or 873-8829.

Laserium and Cosmic Laser Concerts Under the Stars For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Worlds in Space. Wednesday, 7:30 p.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m.
Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours Monday through Saturday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m. Sunday: 11:30 a.m. to 4:30 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking The coat check room is located in the basement next to the cafeteria. There is a charge of 40¢ per coat.

Museum Research Stations Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852.

Southwestern Research Station, Portal, Arizona, 85632.

Focus on Asia

This 19th century okimono from Japan, The Vase Painter, is one of many ivory carvings on display in the Hall of Asian Peoples.

Asia Live

The People Center is presenting five weekends in November on the crafts, dance, music, and traditional cooking of several cultures of Asia. The programs are live and run every weekend from 1:00 to 4:30 p.m.: on November 1 and 2, Japan; November 8 and 9, the Himalayas; November 15, 16, 22 and 23, China; November 29 and 30, the Middle East.

On Thursday, November 6 and Tuesday, November 18, Members are invited to join a free tour of the Gardner D. Stout Hall of Asian Peoples. Assemble at the first floor Information Desk at 2:00 p.m. on the day of the tour.

Asia Films

The weekend film programs on Asia will be continuing through November, and will feature the cultures of the Himalayas and China.

Included in the program will be the famous C. Suydam Cutting film, *Beyond the Forbidden Frontier*, containing the first footage of life in Tibet. Cutting, who was a Museum trustee, was the first white Christian to enter Lhasa, the center of Tibetan religious life. To gain the privilege, he sent the Dalai Lama such presents as fine hounds, gold watches, and heating appliances.

The films of China feature 1980 releases on three cities, X'ian, Suzhou, and Beijing (Peking). X'ian contains scenes of the spectacular Han and Tang tomb mounds with thousands of clay warriors (some of which were recently exhibited in the United States).

A complete schedule of films appears below. All films are free and are shown in the Auditorium.

The Himalayas. November 8 and 9.

2:00 — *Beyond the Forbidden Frontier*, C.S. Cutting, 1935. The first footage of Tibetan life.

2:30 — *Rumtek* Rameshwar Sharma, 1978. An inside look at a Tibetan monastery.

3:10 — *The Living Goddess*, Frank Heimans, 1978. About the Kumari of Nepal, who select virgin girls to be living goddesses.

China November 15 and 16. China through the eyes of Chinese-Americans, Sue Yung Li and Shirley Sun.

2:00 — X'ian, 1980. The ancient Chinese city, including footage of the spectacular treasures of the Han and Tang imperial tomb mounds with thousands of clay warriors.

3:00 — Suzhou, 1980. A city of canals, bridges, gardens, and artisans.

3:30 — Beijing, 1980. Beijing (Peking), China's imperial capital for 600 years, now becoming a modern center of culture and commerce.



Music & Dance

A program of modern Japanese dance will be presented at the Museum on Sunday, November 2 at 2:00 p.m. in the Auditorium.

Saeko Ichinohe and her company will perform modern dance pieces based on traditional Japanese dance.

On Wednesday, November 5 at 7:00 p.m. in the Auditorium, the Chinese Music Ensemble will present *Music of China*.

The ensemble will play traditional Chinese music, including some Cantonese compositions. Several modern Chinese pieces are also included in the evening.

Both programs are free. Tickets will be given out on a first-come, first-served basis at the first floor Information Desk beginning two hours before each performance. No reservations will be taken.

The Holy Land

The Holy Land already had an ancient and complex history by the time of Christ. For years, archeologists have been uncovering clues to its ancient civilizations, including ruins of fortresses, cities, desert palaces, and such artifacts as plastered and painted skulls, hippopotamus tusk sculptures, reliefs in ivory, and precious stones. Little by little, these discoveries have built an intricate picture that adds new significance to some of the Bible stories and the civilizations that recorded them.

Dr. Claireve Grandjouan,

professor of classics at Hunter College, will give an illustrated lecture, *The Holy Land Before Christ*, on Wednesday, December 3 at 7:00 p.m. in the Auditorium. Dr. Grandjouan has given lectures at the Museum before, most recently during the exhibition POMPEII AD79.

The tickets are \$5 (\$4 for Participating, Donor, and Elected Members) and may be ordered with the adjacent coupon. For more information, call 873-7507. Members are advised to reserve tickets as early as possible.

I would like to order tickets to the *Holy Land Before Christ*. Tickets are \$5 each (\$4 for Participating, Donor, and Elected Members).

No. of tickets: _____ Amount enclosed \$ _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Enclose check payable to the American Museum of Natural History and a stamped, self-addressed envelope. Mail to: Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Advance registration is requested. Any remaining tickets, if available, may be purchased at the Auditorium door on the evening of the lecture. For information, call 873-7507.

Sun

Mon

Tue

Wed

Thu

Fri

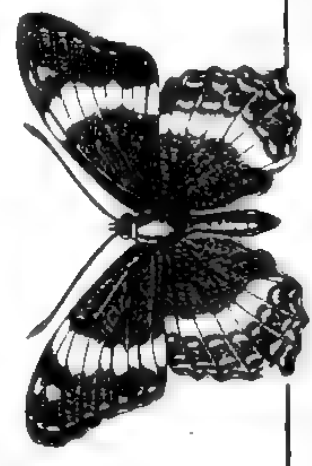
Sat

November



1 11:00 a.m. *New York Map Society.* Room 129. Free.
1:00 to 4:30 p.m. *Japan.* Special series of lecture-demonstrations about the people, arts and crafts, and cooking of Japan. People Center. Free.

2 1:00 to 4:30 p.m. *Japan.* (See November 1.) People Center. Free.
2:00 p.m. *Japanese Modern Dance* with Saeko Ichinohe. Auditorium. Free (Page 6)
Riverside Park Tour with Sidney Horenstein. Call 873-1327 for reservation information.



3 **4** Taurid meteor shower

9 1:00 to 4:30 p.m. *Himalayas* People Center Free. (See November 8)
2:00 p.m. *Himalaya Films* Auditorium. Free (Article page 6)
2:00 p.m. *New York Shell Club.* Room 426. Free

11 8:00 p.m. *Central Park: Nature and History* Linnaean Society of New York. Education Hall. Free.

12 7:30 p.m. *Natural Spaces. November Members' program with William Whyte.* Auditorium. Free for Members, \$3.50 for non-members. (Article page 2.)
7:30 p.m. *Animal Behavior Society.* Room 129. *New York Mineralogical Society.* People Center. Both free.

13 2:00 p.m. *Magic, Witchcraft, and Sorcery* Gallery talk with Nat Johnson Assemble at the first floor Information Desk Free.
5:30 p.m. *New York Audubon Society.* Education Hall. Free
Behind-the-Scenes Tour. Participating. Donor and Elected Members only. \$6.00. Call 873-1327.

14

15 1:00 to 4:30 p.m. *China* Special series of lectures on the peoples, crafts, and cultures of China People Center Free
2:00 p.m. *China Films* Three 1980 films on the Peoples Republic of China Auditorium Free (Article page 6)
Behind-the-Scenes Tour. Participating. Donor and Elected Members only. \$6.00. Call 873-1327.

First quarter (half moon)

16 12:45 p.m. *American Cetecean Soc* Room 319 Free
1:00 to 4:30 p.m. *China* People Center. Free. (See November 15)
2:00 p.m. *China Films.* Auditorium. Free (See November 15)
2:00 p.m. *New York Turtle and Tortoise Society.* Room 129. *New York Paleontological Society.* Room 429. Both free.

17 Leonid meteor shower

18 2:00 p.m. *The Gardner D. Stout Hall* of Asian Peoples Gallery talk Assemble at the first floor Information Desk. Free.
8:00 p.m. *New York Entomological Society* Room 129 Free

19 8:00 p.m. *New York Aquarium Society.* Room 129 Free.
Behind-the-Scenes Tour. Participating. Donor and Elected Members only. \$6.00. Call 873-1327.

20 2:00 p.m. *Warm-Blooded Dinosaurs?* Gallery talk with S. Buffum Assemble at the first floor Information Desk. Free
7:30 p.m. *Lapidary and Gem Society* People Center Free
8:00 p.m. *New York Microscopical Society.* Room 419 Free

21

22 1:00 to 4:30 p.m. *China* Special series of lecture-demonstrations on the peoples, crafts, and cultures of China People Center Free
Full moon

23 Noon to 4:30 p.m. *Amphibian and Reptile Day.* Members are invited to learn about reptiles and amphibians with curators and assistants. (Article page 1.)
1:00 to 4:30 p.m. *China* People Center. Free (See November 22)
2:00 p.m. *Jazz & Caribbean Connection.* Auditorium. Free (Article page 6.)

24 The 1980 Origami Holiday Tree is on display in the Roosevelt Rotunda. More origami animals than ever before, including spiders, giraffes, whales, antelopes, monkeys, and balloons.

25 2:00 p.m. *Traditional African Artists* Gallery talk with J. Munoz Assemble at the first floor Information Desk. Free
8:00 p.m. *Met Grotto: National Speleological Society.* Room 129 *Guide to National Wildlife Refuges.* Linnaean Society of New York. Education Hall Both free

26 Star of Wonder, sky show at the Hayden Planetarium opens.

27 Thanksgiving Day Museum closed for the day

29 1:00 to 4:30 p.m. *Middle East* Special series of lecture-demonstrations on the peoples of the Middle East, and their arts and crafts, music, and dance
Last quarter (half moon)

American Museum of Natural History

30 1:00 to 4:30 p.m. *Middle East* People Center Free (see November 29)

EXPERIENCE THE MIRACLE...

at the American Museum
of Natural History

In 1935, the poet e.e. cummings wrote to a friend in Europe: "There is a miracle in NYCity. This miracle is worth your travelling to NYCity. This miracle is a 'natural' history museum . . ."

The American Museum of Natural History is a treasure house filled with once-in-a-lifetime experiences. A visit can mean standing eye to eye with an Olmec god or eye to knee with Tyrannosaurus Rex. It can mean walking by an elephant stampede or touching the largest topaz crystal in the world.

Membership in the Museum gives you a chance to experience the "miracle," to delve into the intricacies of nature and the variety of human cultures. And, as a Member, you will be helping to support the vital scientific and educational programs that have made the Museum one of the world's foremost research institutions.

Here's what you will be giving to yourself and your family (or a friend) if you join the Museum:

Rotunda, the Museum's newsletter delivered to your home ten times a year, with advance notice of all programs and events.

Natural History magazine, 12 issues filled with stunning photography and fascinating articles about the natural world.

Free admission to the Museum at all times for a whole family, or two adults and four children.

Invitations to special previews, private viewings, and social events celebrating the opening of new halls and major exhibitions.

Free films and lectures every month, given by anthropologists, naturalists, scientists, filmmakers, writers, and others who will challenge you with their ideas and fascinate you with their knowledge.

Free weekend programs and workshops for your family.

Large discounts at all Museum and Planetarium shops.

Large discounts for Museum and Planetarium courses, evening lecture series, and film series.

Special prices on tickets to many events.

Invitations to Behind-the-Scenes tours of the Museum's scientific departments and research labs, where you will meet curators and scientists.

Visiting privileges to the elegant Members' Reception Lounge.

Visiting privileges to Museum field stations in Florida and Arizona.



Yes! I would like to become a Member of the Museum and receive *Natural History* magazine, *Rotunda*, and all the benefits listed above:

- ☐ \$30 Participating Membership (a family/dual membership)
- ☐ \$50 Donor Membership
- ☐ \$100 Donor Membership (Donor Membership has the same benefits as Participating, plus recognition of having made a significant contribution to the Museum)

Name: _____ (Please print clearly)

Address: _____

City: _____ State: _____ Zip: _____ HNSA

Please make check out to the American Museum of Natural History and mail to: Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please allow six to eight weeks to receive your first copy of *Natural History* magazine.

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History | Vol. 4, No. 10 December 1980



Thomas Gilliard

Into New Worlds

In 1953, Thomas Gilliard of the Museum's Department of Ornithology embarked on an expedition to Papua New Guinea's Sepik River. After three months' exploration in the middle Sepik, the expedition ventured to the headwaters, a region that had never before been explored by scientists. To get there, Gilliard flew to a remote airfield built by paratroopers during World War II. Once there, he surveyed the natural history of the area, discovered new sub-species of birds and documented the remnants of a stone-age culture.

Gilliard captured his expedition on film and presented it as a Members' lecture in 1960. Although Gilliard is no longer alive, the lecture was recorded and has now been combined with his film to make a fascinating document of

the expedition. Members will be able to view the film and listen to Gilliard's comments at our December Members' program on Wednesday, December 17, 1980 at 7:30 p.m. in the Museum Auditorium. The program will be introduced by Mary Le Croy of the Museum's Department of Ornithology who was a colleague of Gilliard, and who has herself just returned from a trip to New Guinea.

Gilliard's film includes shots of the beautiful birds of paradise as well as other birds and wildlife of the area. The major portion of the film portrays the aboriginal tribes of the region. There are scenes of villagers preparing for a marriage ceremony, carving and displaying beautiful masks, and fashioning a canoe from a "canoe tree" and launching it into the Sepik River.

A native hunter from the remote Telefomin region of central New Guinea. Thomas Gilliard's 1957 expedition to New Guinea will be the subject of our Member's Program on Wednesday, December 17 at 7:30 p.m.

There is also footage of a sixty-six-foot-tall spirit house found in the depths of the forest.

The program is free to all categories of Membership. Non-members may purchase tickets for \$3.50 at the Auditorium door. Coffee and tea will be served outside the Auditorium before the program begins. Participating, Donor, and Elected Members are entitled to free parking in the Museum Parking Lot for this program.

The Year in Review

Rotunda takes you behind the scenes for a look at the activities of scientific departments this past year.
Pages 4-5

The Wide World of Dancing

Matteo presents a cornucopia of ethnic dance for the whole family.
Page 3

Paper Glory

This year's Origami Holiday Tree is on display in the Roosevelt Rotunda on the second floor of the Museum.
Page 2

Belugas to Bears

Four films on man's relationship with animals make up this month's Man and Nature Film Series.
Page 2

Fabulous Folk

The musical folk traditions of North and South America visit the Museum with the presentations by Odetta and Tahuantinsuyo.
Page 6

Magic, Love, and Paper

Models were sent in from all over the country, hundreds of volunteers participated, thousands of hours were spent designing, folding, and threading the ornaments, and the resulting magic is none other than the eighth annual Origami Holiday Tree. Designed by Alice Gray, the tree stands twenty-five feet tall, fifteen feet across, and is bedecked with the subtle beauty of folded paper.

Guidance and leadership for the many volunteers was provided by Alice Gray, Michael Shall and The Friends of the Origami Center of America, whose patience and nimble fingers allow not only for the perpetuity of the tree, but also for the experiences of those who participate.

Those who visit will find the marvelous dinosaurs, pandas, elephants, strawberries, frogs, even cockroaches of years past, and will be pleased to see new creations, as well. Those joining the tradition include scorpions, storks, rhinoceros, hedgehogs, dallias, and dragons commemorating the Museum's new Hall of Asian Peoples.

The tree will be on display in the Roosevelt Rotunda on the second floor of the Museum through Monday, January 5. There will be paperfolding demonstrations near the tree much of the time, so come in and see the magic.



AMNH

African Rhythms

On Sunday, December 14 at 1:00 and 3:00 p.m., Dinizulu and his African Dancers, Drummers, and Singers will present a narrated concert in the Museum's Auditorium. The program will include songs and dances from across Africa, ranging from a South African Wedding Dance to a Nigerian Dance, of Competition.

The Company is made up of young Africans, both native and American, who, with their Director, Nana Dinizulu, love the culture of their ancient kingdoms. They study them, live them, and especially enjoy presenting their lore. The oldest African dance company in the

United States, they have received high acclaim performing here and abroad for all ranges of audience. Thousands of American school children of all cultural and ethnic backgrounds have received their first authentic introduction to African culture with Dinizulu, and this is his second performance at the Museum.

The program has been made possible in part by the New York State Office of Parks and Recreation, and a gift from Evelyn Sharp. Free tickets will be available for all Museum visitors beginning at 11:30 a.m. the day of the performance near the first floor Information Desk.

Members' Memo

Few things bring in more queries from Members than the parking situation. The parking lot, situated between Central Park West and Columbus Avenue on 81st Street, has a capacity of 106 cars. Not room for many, when one considers that there can be over 10,000 visitors in the Museum on a given day!

Parking in the lot costs \$3.75, but on Member Program Wednesday evenings, we provide free parking for our Members. Unfortunately, however, not all Wednesday night programs that Members come to are "Members' Programs," and for those evenings, all visitors are charged for parking. For instance, the Department of Education does a considerable amount of programming on Wednesday evenings and they are not able to provide special parking for their programs. Since this can be confusing, whenever parking is available free to our Members, we will print that at the end of our articles. Please note, that parking can only be available to the capacity of the lot. If you are incorrectly charged for parking, please save your parking stub, and give it to one of us at the Members' Program, so we can explain the situation to you or arrange a refund.

Someday we do hope to create a larger lot, but as you

know, such improvements are costly and must wait for available funding.

The Department of Education has just completed preparing a general pamphlet guide to introduce visitors to the new Gardner D. Stout Hall of Asian Peoples. Funded by a generous grant from the Starr Foundation, the guide is richly illustrated with photographs of various sections of the new hall. The pamphlet is now available at the information desks.

Douglas Preston, the editor of *Rotunda* for the past two years, has just been promoted to the position of Publications Editor for *Natural History* magazine. While we will miss his input on *Rotunda* and Membership activities, we wish him well. He will continue to write the *At the Museum* column in *Natural History* magazine. We have hired Stanton Orser, a recent graduate of Princeton University, to edit *Rotunda*. He joins us with this issue.

The 1981 *Natural History* calendar takes a new format this year. The first six-month poster/calendar comes with the December magazine, the second in June 1981.

Kate Bennett-Mendez

Family Films

Four films on the relationship between man and animals will be shown Saturday and Sunday, December 6-7, in the Museum's Main Auditorium. Focussing on how man's influence can both help and harm, the films will run in succession

lasting two hours.

2:00 *Beluga Baby*, Tony Westman, 1979. Birth of a beluga whale in captivity.

2:15 *Osprey*, Hugh Miles, 1979. Osprey return to the Scottish Highlands.

2:45 *Bears and Man*, Bill Schmalz, 1979. Relationship between bears and man in a National Park.

3:15 *Mysterious Castles of Clay*, Alan Root, 1979. The African termite.



ROTUNDA

ISSN 0194-6110

Vol. 4, No. 10
December 1980

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
Mark Abraham — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1980 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

Holiday Week Performances

The Little Theatre of the Deaf in association with the Touchtone Center will perform in the Main Auditorium at 2:30 p.m., Saturday through Tuesday, December 27-30. The program is based on the life of the renowned haiku poet, Issa, using a combination of his haiku and narration. Four of the actors are deaf and one is hearing. The program will be presented in a theatrical form of sign language using movement and mime, which will be simultaneously narrated. The program works within the theme established by the Touchtone Center this year, which is to look at the Chinese and Japanese perception of nature through the arts.

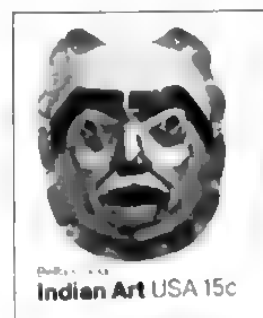
Richard Lewis, Director of the Touchtone Center, is the writer/director of the production, having adapted the script from his book on Issa, *Of This World*. The performance is free



Three members of the Little Theatre of the Deaf engaging their audience. They will perform in the Museum's Auditorium Saturday through Tuesday, December 27-30

Little Theatre of the Deaf

Masks by Mail



One of three Museum masks of the Northwest Coast art tradition honored by the U.S. Postal Service

Three stamps recently issued by the United States Postal Service in the American Folk Art Series depict masks in the Museum's collection. Franz Boas, a Museum curator collected the masks and their accompanying myths and stories during the famous Jesup North Pacific Expedition to the Northwest Coast around the turn of the century. The masks which represent various supernatural beings, were used in the elaborate ceremonies of the Northwest Coast Indians.

Most Northwest Coast art was produced for the heraldic display of family crests or for use in ceremonies, yet the art style of the Northwest Coast Indians so permeated their way of life that often even common objects—spoons, pipebowl, paint-brushes—were elaborately carved. Such art attained its most dramatic form in the monumental totempoles, de-

signed to impress observers with the stature and wealth of their owners. Although the last great flowering of Northwest Coast art took place in the 19th century, Native American artists today continue to produce fine works of art in the Northwest Coast tradition.

Interested Members can obtain the first day cover commemorative issues of the stamps at the Museum Shop, and the Post Office has assured us that stamps will be available throughout the holiday season.

A Family Membership Program A WORLD OF DANCING with the MATTEO ETHNOAMERICAN DANCE THEATER

Sunday, January 18, 1980 — 2:00 p.m. — Auditorium
\$1.00 for Members \$4.00 for non-members

Matteo, who presented one of last year's most popular evening programs, is back again with a dance performance geared especially for families. Matteo and his ethnic dance artists will bring the auditorium to life with a colorful collection of dances from around the world. Dances will include a comical mask dance from Japan; castanets from Spain; jigs and hornpipe dances from Ireland; a *karshilama* from the Middle East; and in a union of East and West, a *mudra* from India set to one of America's most popular tunes. Early reservations are advised for what promises to be a delightful afternoon of entertainment. Please use the adjacent coupon.

I would like to order tickets for A WORLD OF DANCING on Sunday, January 18, at 2:00 p.m.

Participating, Donor, and Elected Members may order up to six tickets at the special Members' price of \$1.00. Associate Members may order one. The non-members price is \$4.00 per ticket.

Total Members' Tickets at \$1.00 \$
Total non-members' tickets at \$4.00 \$
Total payment enclosed: \$

Name: _____

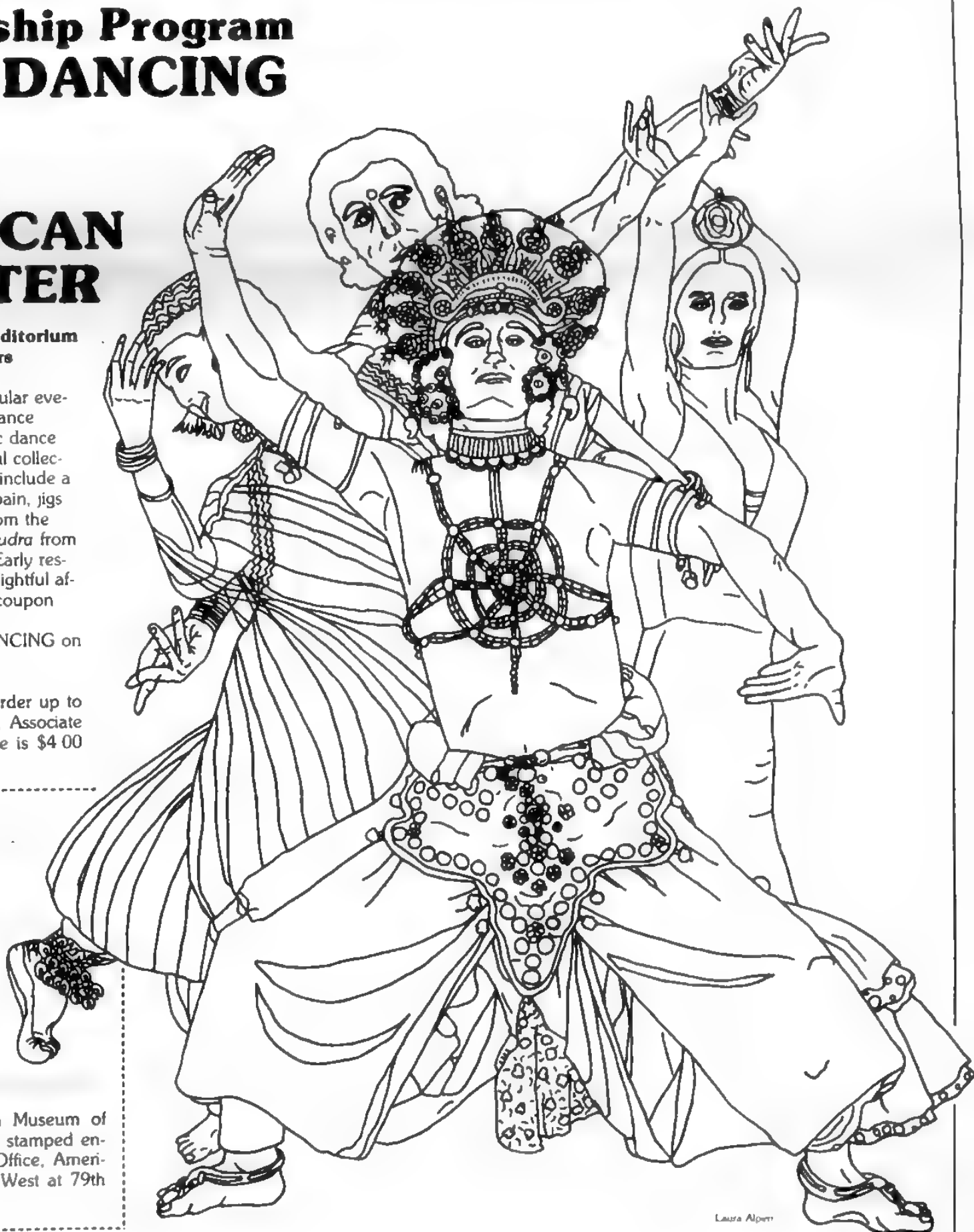
Address: _____

Zip: _____

Daytime phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: A World of Dancing, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.



The Year in Review

The Annual Report for fiscal year 1979-1980 has just been published revealing fascinating behind the scenes information about the Museum. Since we have kept you up to date on the Museum's exhibitions and programs this past year we have selected these random moments to show you the kind of work some of the two hundred scientists and their assistants do daily. This past year they have been busy working on the collections (identification, preservation, and storage), their ongoing research projects (they published over 260 research papers), and the education of future scientists.

Write us here at the Museum, care of the Membership Office, if you would like your own copy of the Annual Report to learn more about all aspects of the Museum's operations and goals.



Dr. Charles Cole and Carol Townsend, two scientists in the Department of Herpetology, discuss their research on the evolution of parthenogenetic lizards. Curiously, some lizards have evolved into all female species in which each adult reproduces independently.



Besides the 260 articles published by staff in scientific publications throughout the year, the Museum has an active publications schedule of its own. Norman Hillman and Charles di Bisceglie of the Micropaleontology Press (Department of Invertebrates) are shown here mounting negatives of micro-fossils for publication.



A visit by a delegation of paleontologists from the People's Republic of China emphasized the Department of Vertebrate Paleontology's long involvement in the study of China and Mongolia. Studies were done on parts of the department's collection pertaining to the delegation's own research.



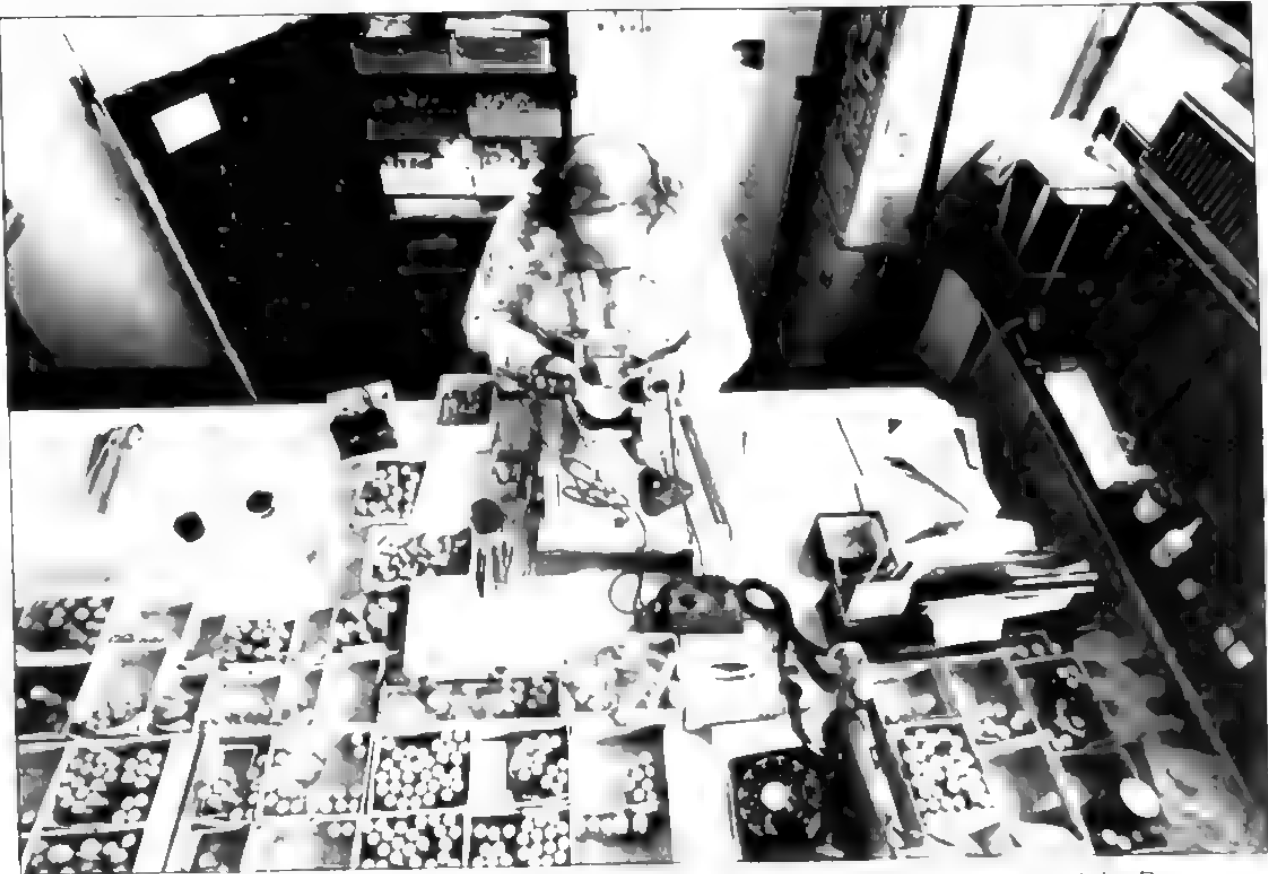
Martin Cassidy of the reproduction section is shown preparing a model of a specimen for shipping. Molds of each specimen are sent to other museums.



This year, 53 thousand specimens were used by researchers in training future scientists is utilized by student Guido Dingerkus on an assignment.



Section of the Department of Exhibition and Graphics is working on the dinosaur models, from the Museum's Hall of Late Dinosaurs, for which several replicas were prepared and several replicas were cast for sale



The identification of each of 23 million specimens is an ongoing concern of the Department of Entomology. Louis Sorkin spends much of his time exactly as shown here, identifying the hundreds of thousands of arachnids (spiders) in the collection



Overseeing the Department of Anthropology's ongoing work on their storage collection were these and other masks. Under the supervision of Barbara Conklin, the collection is being inventoried, conserved (to preserve the fragile and unstable artifacts), and moved into recently renovated storage areas



Specimens were added to the Department of Ichthyology's collection from all over the world. The department's commitment to research is here as curator Donn Rosen works with graduate student on a lung fish specimen.



Dr. Karl Koopman of the Department of Mammalogy worked with bats from four continents this year as part of his research on the relationships of bats throughout the world. He did a bit of spontaneous field work on November 3 when he caught a migrating bat here at the Museum in the Office of Public Affairs

Museum Notes

New Exhibitions

Origami Holiday Tree (Roosevelt Rotunda, second floor.) Asian paper folds adorn the twenty-five-foot tree (Article page 2)

The Gardner D. Stout Hall of Asian Peoples The Museum's newest permanent exhibition hall, containing over three thousand works of art and artifacts

Profiles of the Past: The Geology of Three Southwest Canyons. (Gallery 77, first floor.) Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand, Bryce, and Zion canyons

Flying Fantasies: Butterflies and Moths (Akeley Gallery, second floor.) Opened November 6. Photographs of butterflies and moths: their life cycles, coloration, and beauty

Books on Asia (Library

Gallery, fourth floor.) A selection of rare books used to research the new Hall of Asian Peoples.

Programs and Tours

People Center Ethnic programs featuring dance, music, films, lectures, and workshops are presented in the People Center some weekends from 1:00 to 4:30 p.m. Refer to the full-page calendar for specific events

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times

Discovery Tours The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

Planetarium Events

Star of Wonder. For more than 40 years this show has been delighting New York holiday audiences. It takes Planetarium visitors back two thousand years for a look at the sky of Bethlehem at the time of Jesus' birth, and speculates on the na-

ture of the "star of wonder" that guided the three wise men.

Sky show times:
Weekdays: 2:00 and 3:30 p.m.

Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828 or 873-8829

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Worlds in Space. Wednesday, 7:30 p.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday,

Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m.
Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check room is located in the basement next to the cafeteria. There is a charge of 40¢ per coat.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852.

Southwestern Research Station, Portal, Arizona, 85632.

Sit Like a Buddha

The Buddha was a man named Siddhartha Gautama who was born in a kingdom near India about 563 B.C. Buddha means "enlightened one." People who believe in the teachings of Gautama Buddha are members of a religion called Buddhism. It is one of the largest religions in the world. Most of the people who believe in Buddhism live in Asia.

Pictured below is a drawing of a statue of Gautama Buddha which can be found in our new Hall of Asian Peoples. The next time you come to the Museum try looking for this statue, and see if you can find others in the Hall. (Look especially for the Buddha from Japan covered entirely in gold.) While at home, try sitting like the Buddha pictured here!



Folk Music of the Americas

Musical folk traditions from North and South America will be the theme of two upcoming evenings at the Museum. On January 14, Odetta will present a program of spirituals, blues, ballads, and work songs. A major force in the American folk scene for over 25 years, she was recently proclaimed by the *New York Times* "the most glorious voice in American Folk Music."

Two weeks later, the haunting sounds and rhythms of pre-hispanic South America will be featured, January 28, in a program presented by Tahuantinsuyo. The group, which has performed here before, is com-

posed of Pepe Santana, Guillermo Guerrero, and Sidulfo Iribarra. They will perform songs from Bolivia, Peru, Ecuador, Colombia, Chile, and Argentina. The melodies, harmonic structures, and instruments are all a part of long tradition of South American music which has evolved and combined with more recent Spanish influences.

The Andes Dancers, a group of twelve South American dancers, will accompany them.

Each evening is priced at \$7.00. Participating, Donor, and Elected Members' Tickets are available at \$6.00. For information, please call 873-7507 on weekdays.

I would like to order tickets for the following evenings:

Odetta

Member Tickets at \$6: _____
General Admission Tickets at \$7: _____

Tahuantinsuyo

Member Tickets at \$6: _____
General Admission Tickets at \$7: _____

Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

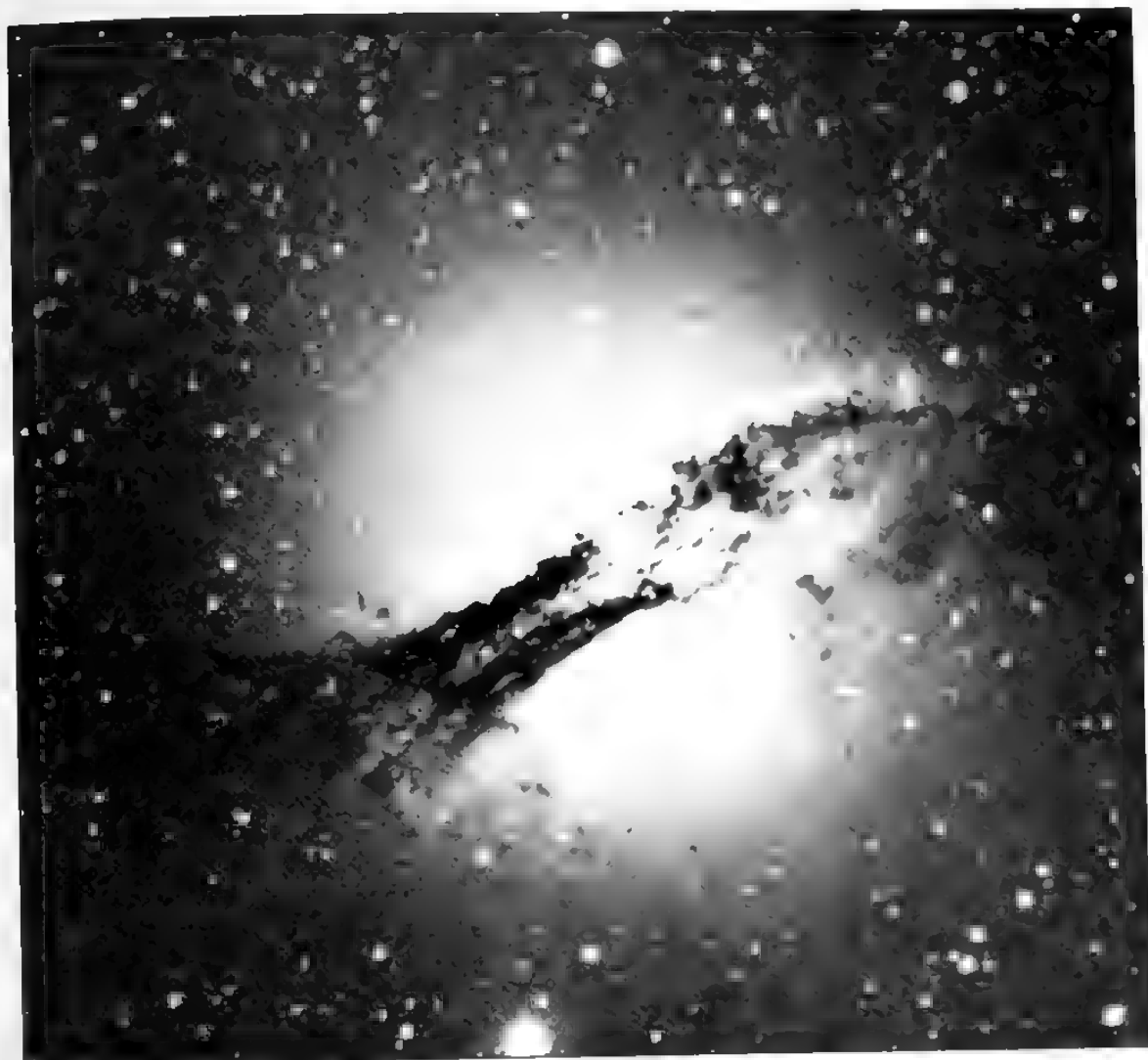
Daytime phone: _____

Membership category: _____

Enclose check or money order payable to American Museum of Natural History, and return with self-addressed, stamped envelope. Mail to the Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Remaining tickets may be purchased on the evening of the program if still available.

Courses for Stargazers



The American Museum—Hayden Planetarium is offering a large selection of courses this winter. Early registration for all courses is suggested, as class sizes are limited. There is limited free parking at the Museum for students in the evening courses.

Participating, Donor, and Elected Members receive a ten percent discount to all courses. You may register for courses with the adjacent coupon.

Astronomy

Introduction to Astronomy.

Begins January 8, eight sessions, Thursdays, 6:30 to 8:40 p.m. \$55 (\$49 for Members) Dr. Bartol.

Stars, Constellations, and Legends. Begins January 8, five sessions, Thursdays, 6:30 to 8:10 p.m. \$40 (\$36 for Members) Mr. Beyer.

How to Use a Telescope. Begins January 5, eight sessions, Mondays, 6:30 to 8:40 p.m. \$55 (\$49 for Members) Mr. Storch.

Aviation

Ground School for Commer-

cial and Instrumental Pilots. Begins January 5, fourteen sessions, Mondays and Wednesdays, 6:30 to 8:40 p.m. \$175 (\$157 for Members) Mr. Mayorga

Navigation
Navigation in Coastal Waters. Begins January 7, ten sessions, Wednesdays, 6:30 to 8:40 p.m. \$90 (\$81 for Members) Dr. Hess.

Introduction to Celestial Navigation. Begins January 6, ten sessions, Tuesdays, 6:30 to 8:40 p.m. \$90 (\$81 for Members) Mr. Pamham.

Advanced Celestial Navigation. Begins January 8, ten sessions, Thursdays, 6:30 to 8:40 p.m. \$90 (\$81 for Members) Mr. Pamham

Piloting for Sailboat Operators. Begins January 6, eight sessions, Tuesdays, 6:30 to 8:40 p.m. \$55 (\$49 for Members) Mr. Helms

Electronic Navigation. Begins January 5, eight sessions, Mondays, 6:30 to 8:40 p.m. \$55 (\$49 for Members) Mr. Mueller

Theory of Celestial Navigation. Begins January 7, eight sessions, Wednesdays, 6:30 to 8:40 p.m. \$55 (\$49 for Members) Mr. Pamham

For Young People
Introduction to the Sky. Begins January 10, ten sessions, Saturdays, noon to 12:50 p.m. \$20 (\$18 for Members) Mr. Small.

Astronomy One. Begins January 10, ten sessions, Saturdays, 10:30 to 11:20 a.m. \$20 (\$18 for Members) Mr. Small

Astronomy Two. Begins January 10, ten sessions, Saturdays, 9:30 to 10:20 a.m. \$20 (\$18 for Members) Mr. Small

Astronomy Three. Begins January 10, five sessions, Saturdays, 11:00 a.m. to 12:40 p.m. \$20 (\$18 for Members) Mr. Thomas

For More Information about Planetarium courses, write to the Hayden Planetarium, 81st Street and Central Park West, New York, NY 10024 or call (212) 873-1300 ext. 206 or 211.

I would like to register for the following Planetarium course(s):

Course: _____ Price: *

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Mail this registration form and a check payable to the American Museum—Hayden Planetarium to: Course Registration, American Museum—Hayden Planetarium, 81st Street and Central Park West, New York, NY 10024 Please note: in the event that a student withdraws from a course, a fee of \$10 and charges for sessions attended will be made on all refunds of tuition. No refunds can be made after the second session. Courses may be cancelled without prior notice, with full refund of tuition.

*Only Participating, Donor, and Elected Members may take the Members' discount

Share the Miracle

Give a Gift of Membership for the Holidays



There is a miracle in NYCity. This miracle is worth your travelling to NYCity. This miracle is a 'natural history' museum .
— e.e. cummings to a friend in Europe, 1935

As a Member, you already know what a 'miracle' the American Museum of Natural History is. You know the Museum is a treasure house filled with once-in-a-lifetime experiences.

Do you know a family, friend, or couple who are curious about our world? Who are interested in anthropology, birds, fossils or gems?

If you do, then a gift of Participating Membership in the American Museum of Natural History is an ideal present for the holiday season. It is a thoughtful and intelligent gift, one that will continue to delight throughout the year. Here's what you'll be giving them:

- Rotunda**, the Museum's newsletter ten times a year, with advance notice of all programs and events
- Natural History Magazine**, 12 issues filled with stunning photography and fascinating articles about the natural world
- Free admission** to the Museum at all times for a whole family, or two adults and four children.
- Invitations to special previews**, private viewings, and social events celebrating the opening of new halls and major exhibitions.
- Free films and lectures** every month, given by anthropologists, naturalists, scientists, filmmakers, writers, and others
- Free weekend programs** and workshops for the family
- Discounts** at all Museum and Planetarium shops
- Discounts** for Museum and Planetarium courses, evening lecture series, and film series
- Special prices** on tickets to many events
- Invitations** to Behind-the-Scenes tours of the Museum's scientific departments and research labs, to meet curators and scientists
- Visiting privileges** to the Members' Reception Lounge
- Visiting privileges** to Museum field stations in Florida and Arizona

Yes! I would like to give a gift of Membership. Please send them their gift card and start their subscription to *Natural History* magazine and *Rotunda*, right away.

- () \$30 Participating (a family/dual membership)
- () \$50 Donor Membership

Name _____

Address _____

City: _____ State: _____ Zip: _____

ST 15A

This gift is from _____

Name _____

Address _____

City: _____ State: _____ Zip: _____

Gift card to read _____

Please make check payable to the American Museum of Natural History and mail to Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Sun

Mon

Tue

Wed

Thu

Fri

Sat

1 Share the Miracle. Give the Museum for the Holidays. See article, page 7.

2 2:00 p.m. Plants of Deserts, Pine Barrens, and Arctic Alpine areas. Gallery talk with Helmut Schiller. Assemble at first floor Information Desk. Free.

3 7:00 p.m. The Holy Land Before Christ. Illustrated lecture with Claireve Grandjouan. Auditorium. Participating Donor, and Elected Members, \$4. Associate Members and non-members, \$5. Call (212) 873-7507 for ticket information. 7:30 p.m. Amateur Astronomers Association, Education Hall. Free.

4 2:00 p.m. Gardner D. Stout Hall of Asian Peoples. Gallery Talk. Assemble at first floor Information Desk. Free.

6 Membership's Origami Workshop. Open only to Participating, Donor, and Elected Members. Reservations required. Call (212) 873-1327 for information. 11:00 a.m. The New York Map Society, Room 129. Free. 2:00 p.m. Man and Nature Film Program. Auditorium. Free. (Article page 2.)

7 2:00 p.m. Man and Nature Film Program. Auditorium. Free. (Article page 2.)

8 7:30 p.m. Animal Behavior Society, Room 129. Free

9 2:00 p.m. The World of Islam. Gallery Talk with Paul Santiago. Assemble at first floor Information Desk. Free. 8:00 p.m. Linnaean Society, Education Hall. Free.

10 7:30 p.m. New York Mineralogical Society, People Center. Free.

11 2:00 p.m. Plants of Northern Forests. Gallery Talk with Helmut Schiller. Assemble at first floor Information Desk. Free. 7:00 p.m. New York Audubon Society, Education Hall. Free

13 1:00 to 4:30 p.m. A Christmas Message by Marionettes. A Marionette Festival based on Caribbean and Hispanic Folklore. People Center. Free. Geminiid meteor shower.

New moon

14 12:45 p.m. American Cetacean Society, Room 319. Free. 1:00 p.m. and 3:00 p.m. Dinizulu and his African Dancers, Drummers, and Singers. Auditorium. Free. (Article page 2.) 1:00 p.m. to 3:00 p.m. A Christmas Message by Marionettes. People Center. Free. (See October 13.) 2:00 p.m. N.Y. Shell Club, Room 426. Free.

15

16 2:00 p.m. Gardner D Stout Hall of Asian Peoples. Gallery Talk. Assemble at first floor Information Desk. Free. 8:00 p.m. New York Entomological Society, Room 129. Free.

17 7:30 p.m. The Sepik River Expedition. Members' program with Mary Le Croy. Auditorium. Free for Members, \$3.50 for non-members. (Article page 1.) 7:30 p.m. Lapidary and Gem Society, People Center. Free. 8:00 p.m. New York Audubon Society, Room 129. Free

19

20

First quarter (half moon)

21 2:00 p.m. New York Paleontological Society, Room 426

New York Turtle and Tortoise Society, Room 129. Both Free.

Full moon
Winter Solstice. Winter begins at 11:56 a.m. E.S.T

22 Ursid meteor shower

23 2:00 p.m. Unique Adaptations in Marine Mammals. Gallery Talk with Sydney Buffum. Assemble at first floor Information Desk. Free 8:00 p.m. Met Groto National Speleological Society, Room 129. Free

24 Museum closes 4:45 p.m.

25 Museum closed Happy holidays

26

27 2:30 p.m. Little Theater of the Deaf. Performance based on the life of Japanese Haiku poet, Issa. Auditorium. Free. (Article page 3.)

28 2:30 p.m. Little Theater of the Deaf. Performance based on the life of Japanese Haiku poet, Issa. Auditorium. Free. (Article page 3.)

29 2:30 p.m. Little Theater of the Deaf. Performance based on the life of Japanese Haiku poet, Issa. Auditorium. Free. (Article page 3.)

Last quarter (half moon)

30 2:00 p.m. Asian Textiles. Gallery Talk with Phyllis Mandel. Assemble at first floor Information Desk. Free 2:30 p.m. Little Theater of the Deaf. Performance based on the life of Japanese Haiku poet, Issa. Auditorium. Free. (Article page 3.)

31 Museum closes 4:45 p.m.



Original by: [illegible]

December
American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History | Vol 5, No 1 January 1981

Program Listings

This Month and the Next, a brief listing of upcoming programs, has been added to the regular format of page two. This should enable Members to easily find important program dates. Special Members' programs for the next five months can be found on page three.

Around the World with Dance

Matteo and his ethnic dance artists, who last year presented one of the most popular evening programs, return with a program of dances from around the world.

Page 3

Bringing Them Back

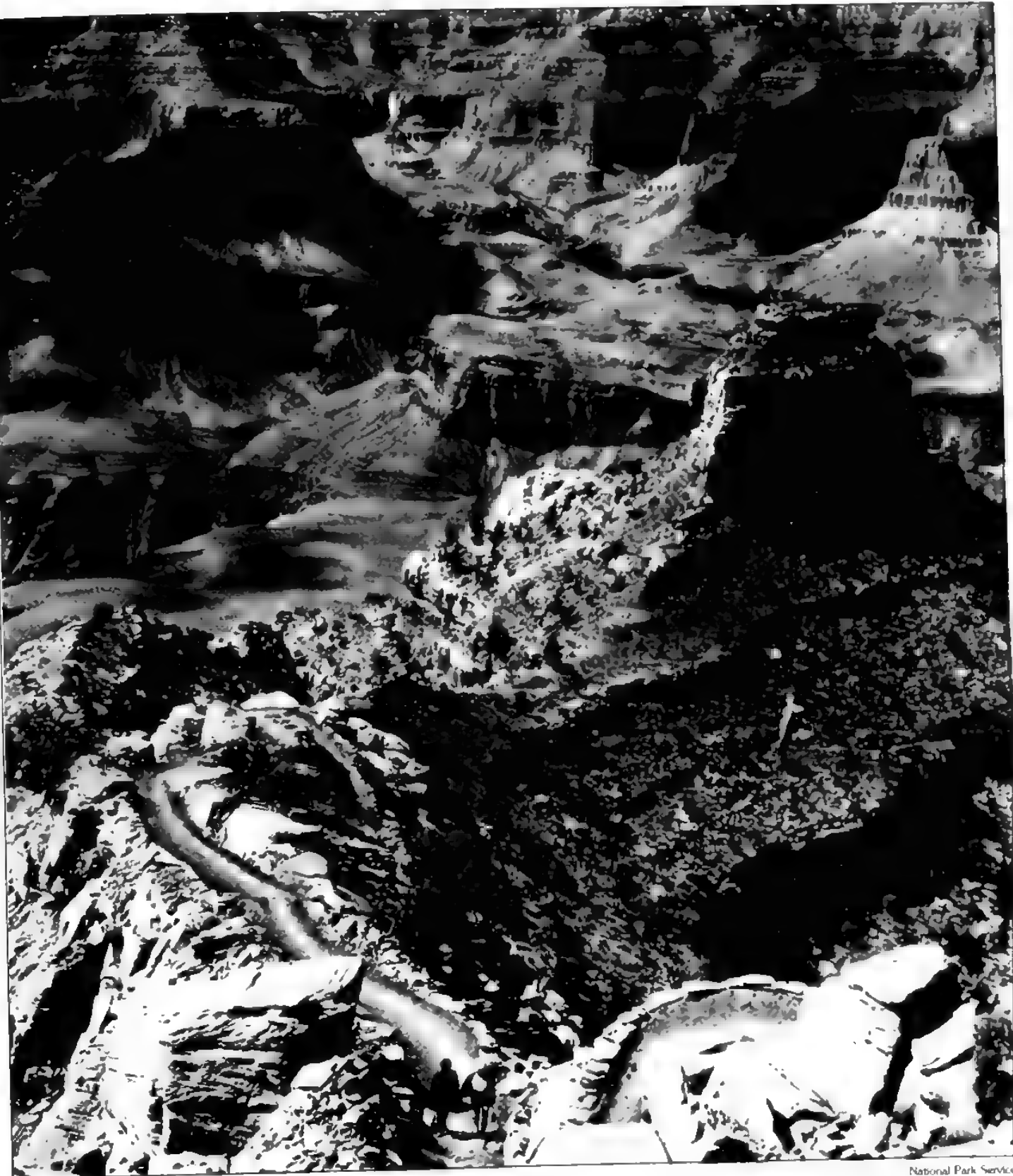
The first in a series of behind-the-scenes looks at the means by which some of the Museum exhibits became Museum exhibits.

Page 4

Lecture Series

The Department of Education is offering a wide variety of afternoon and evening lecture series, as well as workshops for young people.

Pages 5 and 6



National Park Service

The Grand Canyon

Wednesday, January 21, 1981

7:30 p.m. Auditorium

The Grand Canyon is one of the most awesome and beautiful sights in the world. Almost 217 miles in length, an average of one mile in depth, and 18 miles at its widest point, it is the most intricate and complex system of canyons, gorges, and ravines in the world. The walls of the canyons, arranged in horizontal hues of buff, gray, green, brown, and red, present a view of geologic time that stretches across 2 billion years. On descending the canyon, one passes the limestone evidence of ancient seas, fossils entombed in green shale, and, at the bottom, steep walls formed when only the most primitive life existed on earth. There is no other place in the world

that presents such an extensive record of earth events and processes.

Sidney Horenstein, of the Museum's Department of Invertebrates and curator of the canyons exhibition now in Gallery 77, will present an illustrated talk on the natural history of this magnificent canyon. He will explain the mighty forces that shaped and sculpted the canyon and discuss the geologic tales that the canyon walls tell. He will examine the fossil record, discussing what it tells us about the evolution of life on earth, and will also look at the plants and animals that inhabit this magnificent terrain today.

The program is free to Members and \$3.50 for non-members. Coffee

The Inner Gorge of the Grand Canyon. Join us for Sydney Horenstein's illustrated Evening Members' Program on the natural history of the Grand Canyon.

and tea will be served outside the Auditorium before the program begins. Participating, Donor, and Elected Members of the Museum are entitled to free parking in the Museum Parking Lot for this lecture.

Members' Highlights Tours

In February, the Membership Office will offer tours of the Hall of Mexico and Central America and of museum exhibition techniques. All tours are led by volunteers from the Museum's outstanding Highlights tour program

Mexico and Central America.

This tour will introduce you to Aztec, Mayan, Olmec, and other pre-Columbian cultures, and the beautiful stone, jade, gold, and ceramic works they produced

The Art of Exhibition

This tour will take you to the Hall of African Mammals and the Hall of Amphibians and Reptiles to show you the various techniques and "tricks-of-the-trade" the Museum uses to create its strikingly realistic exhibits

To join one of these tours, please use the adjacent coupon. The tours are open only to Participating, Donor, and Elected Members of the Museum



This Mayan clay sculpture from the Hall of Mexico and Central America depicts the Mayan physical ideal — deformed head, extended nose, crossed eyes. Learn more about this hall on one of the Members' tours.

Please sign up for one tour only. (Please indicate a first and second choice of times.)

Mexico and Central America

- Wednesday, January 28 at 6:30 p.m.
- Sunday, February 8 at 11:00 a.m.
- Wednesday, February 11 at 6:30 p.m.
- Saturday, February 28 at 11:00 a.m.

The Art of Exhibition

- Sunday, February 1 at 11:00 a.m.
- Wednesday, February 4 at 6:30 p.m.
- Wednesday, February 18 at 6:30 p.m.
- Sunday, February 22 at 11:00 a.m.
- Wednesday, February 25 at 5:30 p.m.

Number of people _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Please mail with a self-addressed, stamped envelope to: Members' Tours, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Members' Memo

Twenty-two times a year we mail *Rotunda* or *Natural History* magazine to each member. Because of the unpredictability of mail arrival, and the rising costs of paper, printing, and mailing, we are trying to incorporate any additional mailings to our Members into *Rotunda*. For this reason all special invitations to hall openings and viewings, and invitations for Behind-the-Scenes Tours are now included here in the newsletter. To be informed, therefore, of all opportunities available to you as a Museum Member, it is important to read *Rotunda* monthly.

We are aware that some Members would like to see

some changes in the *Rotunda* format so information of this sort can be gleaned at a glance. Therefore, beginning this issue, we are adding a new section listing all dates of significance to Members, and whether a coupon is necessary to sign up for a program. This can be found here on page two and should help guide you in your reading. We will also include programs for the upcoming month, and will try to cover any which are important and come before the 15th of the next month. We hope this will solve some of the problems caused by the Post Office's late delivery.

A particular interest of mine is to bring more historical information to the pages of *Rotunda*, so for the next several issues I am adding a new section of the stories behind our collections.

During the first half of its 111-year history the Museum pursued a particularly active policy of collecting. Hundreds of expeditions were sent out to scour the world for the wonders of our planet. Over the years there have accumulated over 34 million artifacts and specimens, and countless fascinating stories which go with them. Many times the story of how and why the Museum got something is as interesting as the object itself. Although the best of our collections are on display, few of the stories of

how they were found are recorded in the labels and available for visitors. Stories are buried in the archives, in letters or in memoirs, or just in the memory of someone on the staff.

I've been combing through the archives lately for such information. Each month I will focus on an exhibit in one of the halls and tell the "behind-the-scenes" story of how it came to be. When possible, a photograph from the archives will accompany the information and illustrate some aspect of the story. This addition begins in this issue on page four.

Kate Bennett-Mendez

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 1
January 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
Mark Abraham — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at *Natural History Magazine*, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1980 American Museum of Natural History. Second-class postage paid at New York, N.Y.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

Title of Publication: *Rotunda* Publication number: 01946110 Date of filing: 12/1/80 Frequency of issue: monthly September to April, bimonthly May to August Number of issues published annually: 10 Annual subscription price: \$3.00 Location of known office of publication: Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 Location of the headquarters or general business offices of the publishers: American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 Publisher: David Ryus American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 Editor: Stanton G. Orser American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 Managing Editor: none Owner: American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 Known bondholders, mortgagees and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: none The purpose, function, and non profit status of this organization and the exempt status for Federal income tax purposes have not changed during preceding 12 months Total number of copies printed: average number copies each issue during preceding 12 months: 32,000, actual number of single issue published nearest to filing date: 36,000 Paid circulation: sales through dealers and carriers, street vendors and counter sales, average number copies each issue during preceding 12 months: none actual number of copies of single issue published nearest to filing date: none Mail subscriptions: average during preceding 12 months: 20,937, issue published nearest to filing date: 24,175 Total paid circulation, average during preceding 12 months: 20,937, issue published nearest to filing date: 24,175 Free distribution by mail carrier or other means: samples, complimentary, and other free copies, average during preceding 12 months: 10,763 issue published nearest to filing date: 11,525 Total distribution: average during preceding 12 months: 31,700 issue published nearest to filing date: 35,700 Copies not distributed: office use left over unaccounted spoiled after printing, average during preceding 12 months: 300 issue published nearest to filing date: 300 Returns from news agents, average during preceding 12 months: none issue published nearest to filing date: none Total, average during preceding 12 months: 32,000 issue published nearest to filing date: 36,000 I certify that the statements made by me above are correct and complete (signed) Stanton G. Orser, Editor

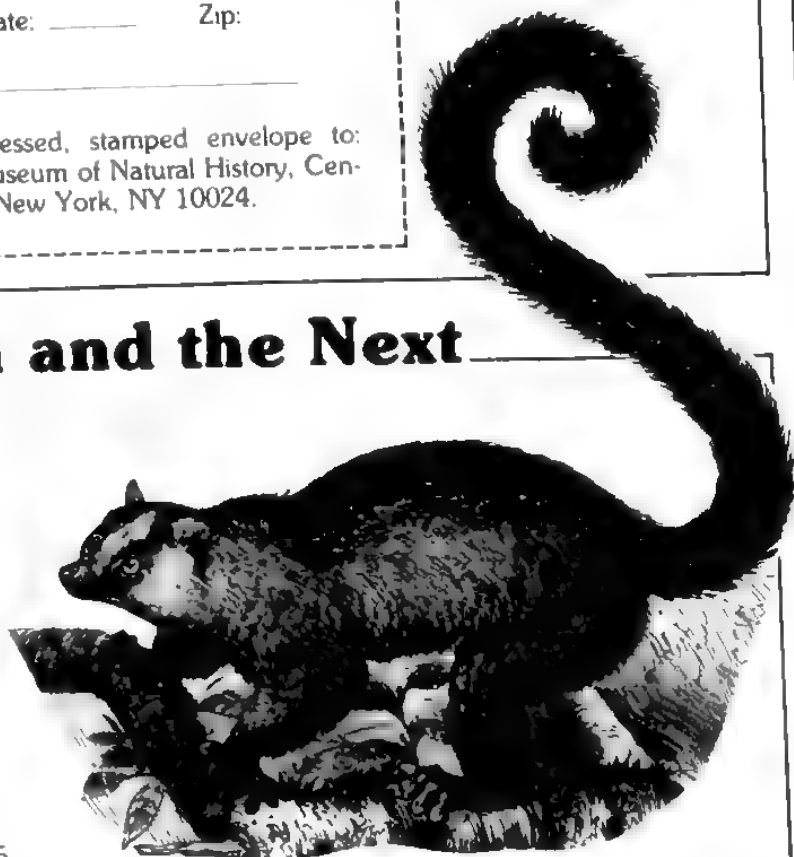
This Month and the Next

January Programs

- Grand Canyon page 1
- Matteo (coupon) page 3
- Odetta and Tahuantinsuyo page 4
- Sign-up for courses pages 5 and 6
- See calendar for others

February Dates to Save

- Family Film Festival Feb 16
- Tribute to Paul Robeson Feb 22
- Visions at T-Minus Zero Feb 25



Upcoming Members' Programs

January through May

Wednesday Evening Members' Series

The Grand Canyon

Wednesday, January 21 at 7:30 p.m. Auditorium.
Speaker: Sidney Horenstein, Scientific Assistant in the Department of Invertebrates. Admission: Free to Members, \$3.50 for non-members.

Mr. Horenstein, curator of the canyons exhibition now on display in Gallery 77, will use slides and a short film to discuss the natural history of the Grand Canyon from the geologic tales told by the canyon walls to the plants and animals inhabiting its magnificent terrain. (Article page 1.)

Visions at T-Minus Zero

Wednesday, February 25 at 7:30 p.m. Auditorium.
Speaker: John Teton. Admission: Free to Members, \$3.50 for non-members.

Mr. Teton will present a multimedia program exploring historical and contemporary views of the universe. The program will use many short film clips including an excerpt from the science fiction thriller *When Worlds Collide* and NASA's magnificently photographed *Spaceborne*.

Shanwar Telis: Shipwrecked Jews of India

Wednesday, March 18, at 7:30 p.m. Auditorium.
Speaker: Johanna Spector, Professor of Musicology, Jewish Theological Seminary. Admission: Free to Members, \$3.50 for non-members.

In the 2nd century B.C., a boatload of Judean Jews was shipwrecked in the Indian Ocean off the west coast of India. They settled in the Konkan region where they became known as the "Shanwar Telis" (Sabbath-observing oil pressers). Dr. Spector will present her award-winning film about this community and the lives of their descendants in present-day Bombay.

Members' Preview of the Arthur C. Ross Hall of Meteorites

Date and time to be announced.
Admission: Free and open only to Participating, Donor, and Elected Members of the Museum.

We are pleased to invite Members to preview the new home of our meteorite collection featuring Ahnighito, the largest meteoritic fragment on display anywhere in the world.

Family Members' Series

A World of Dancing with Matteo

Sunday, January 18, 1981 at 2:00 p.m. Auditorium.
Admission: \$1.00 for Members, \$4.00 for non-members.
Matteo and his ethnic dance artists will present a selection of lively dances from around the world. (Article page 3)

Visions at T-Minus Zero

Sunday, March 1 at 2:00 p.m. in the Auditorium.
Speaker: John Teton. Admission: Free to Members, \$3.50 for non-members. Mr. Teton will present a multi-media program exploring historical and contemporary views of the universe. The program will use a variety of short film clips including an excerpt from the science fiction thriller *When World Collide* and NASA's magnificently photographed *Spaceborne*. This program has been especially tailored for a family audience. For the adult program see Wednesday, February 25.

Tale of Two Whales

Saturday, March 21 at 11:00 a.m. and 2:30 p.m. and Sunday, March 22 at 11:00 a.m. and 2:30 p.m. Education Hall.
Admission: Free for Members, \$3.00 for non-members. Advance reservations required. (See February and March *Rotunda* for registration coupons).

Children seven years old and under will view the birth of a Beluga, touch a Narwhal tusk, sing along with humpback whales, and draw a whale of their own in this participatory play and program about whales and whale biology. Presented by Canada's Touring Museum for Toddlers.

Birds of Prey

Sunday, April 12 at 11:00 a.m. (seven years old and under) and at 2:00 p.m. (all ages) in the Auditorium.
Speaker: Bill Robinson. Admission: Free to Members, \$3.00 for non-members.

Bill Robinson will use slides, film and living owls, hawks, and eagles, to discuss the various birds of prey and the unique ways they have adapted to their environments.

Special Members' Events

The Chimpanzee: Portrait of the Best Known Ape

Wednesday, May 13 at 7:30 p.m. Auditorium.
Speaker: Jane Goodall. Admission: \$4.50 for Members, \$7.50 for non-members.

Internationally renowned scientist, Jane Goodall, will give a slide and film presentation on her pioneering studies of the wild chimpanzees in the Gombe Stream Reserve, Tanzania.

Special Members' Reception for Shakespeare: The Globe and the World

A temporary exhibition coming in July, featuring a rare collection of Shakespeareana. Date to be announced.

Behind-the-Scenes Tours

Tours of scientific departments. Details to be announced.

All the programs on this page will be featured in future issues. Check *Rotunda* each month for more information.



United Nations of Dance



Laura Aspen

On Sunday, January 18 at 2:00 p.m., Matteo and his ethnic dance artists will bring the Auditorium to life with a program of dances from around the world. It will be a "united nations" of dance, as Matteo takes you to Ireland, Spain, Japan, India, the Middle East, and Latin America.

Children and adults alike will be delighted by a comical mask dance from Japan, an Irish sword dance, and a cane dance from Egypt. The program will include a lively set of classical dances from Spain and a unique castanet quartet. Matteo will conclude the program with a blend of East and West as he performs an Indian Mudra to one of America's most popular folk tunes.

The *New York Times* has described Matteo as "one of the most versatile performers in the field of ethnic dance". Last year

he presented one of our most popular evening programs and we are happy to have him back for what promises to be a joyful afternoon of entertainment.

Tickets for the program are \$1.00 for Members and \$4.00 for non-members. Please send for tickets with the adjacent coupon.

Total Members' Tickets at \$1.00 \$
Total non-members' tickets at \$4.00 \$
Total payment enclosed \$

Name

Address

City

State

Zip

Daytime phone

Membership category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: A World of Dancing, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Two Musical Evenings



Two programs of American folk music *Odetta* and *Tahuantinsuyo* will be presented this month by the Department of Education in the Main Auditorium

On Wednesday, January 14 at 7:00 p.m., Odetta will give a program of work songs, spirituals, blues, and ballads. Recognized as a legendary musical figure throughout the world and

a major force in the American folk scene for over 25 years, she has been acclaimed by the *New York Times* as, "the most glorious voice in American Folk Music."

Two weeks later on Wednesday, January 28 at 7:00 p.m., *Tahuantinsuyo* will perform *Music of the Andes*. Accompanied by the Andes Dancers, a group of twelve South Americans, they will perform songs from Bolivia, Peru, Ecuador, Colombia, Chile, and Argentina. The haunting sounds and rhythms of the music and instruments represent musical traditions of pre-Hispanic South America which have evolved historically and combined with more recent Spanish influences

Each evening is priced at \$7.00 Participating, Donor, and Elected Members' tickets are available at \$6.00. For information, please call 873-7507 on weekdays

Tahuantinsuyo, a group of three musicians, will give a concert of pre-Hispanic music from South America on authentic instruments Wednesday, January 28, 7:00 p.m., in the Auditorium

Tahuantinsuyo

Bringing Back Tyrannosaurus rex

Between 1891 and 1909, 52 Museum expeditions crisscrossed fossil-rich areas in North America, searching for specimens to go into the Museum collection and give insight to the past. For the first several of these expeditions, the Museum's goal was to form a collection of fossils that would exhibit the complete history and evolution of mammalian life in North America. But in 1897, the chance discovery of several dinosaur skeletons led to enlarging the research interests to include collecting a complete record of all past vertebrates.

It was an exciting time to do such fieldwork, for virtually every time fossil hunters went into the field, never-before-seen specimens were found. And as added incentive, there was an ongoing race between the fossil hunters from various institutions: finding a fossil not yet in anyone's collection brought with it the rights both to research it, and, more importantly, to name it. The Museum wanted to find and name as many specimens as possible, and to display the bones in the exhibition halls. Each year the people of New York City loved to come to the Museum to see what new treasure the expeditions had found.

Near Hell Creek, Montana, 130 miles from Mile City, Barnum Brown, the 26-year-old curator of fossil reptiles, found the fossil remains of an enormous dinosaur with very large teeth. Elaborate but necessary preparations were immediately begun to bring the fragile and brittle fossils back to the Museum. The sandstone cover-

ing the bones was removed by chiseling, and as the surface of the fossils became exposed, they were shellacked.

In order to remove the entire dinosaur, a pulley system was used to hoist whole blocks of sandstone containing the fossils from the ground. To prevent crumbling and disintegration during travel, the blocks were first covered with a layer of rice paper and shellac, then covered by a casing of burlap dipped in plaster to form an immobile jacket. The largest block removed weighed 4,150 pounds and contained the pelvis. A sled drawn by six horses was used to move it up the hill to a wagon, which was pulled by four more to complete the 130-mile journey to the railroad station.

Back at the Museum, the process was reversed, carefully removing the plaster jacket and rice paper. There the technicians started the delicate process of removing from the fossil all the surrounding sandstone. It wasn't until 1905, three years later, that the bones were finally free to be researched and named *Tyrannosaurus rex* (Tyrant King of the Lizards). It was a surprisingly complete fossil, missing only its tail and a single arm bone.

In 1908, Barnum Brown (who eventually dug up more dinosaurs than anyone in history) found another *Tyrannosaurus rex* in the same area that included a complete tail. Together the two fossil skeletons provided the almost complete set of bones needed to put the giant together. Where a bone was lacking, the missing part was cast.

When the dinosaur was finally displayed, it stood twenty feet high, with its knee joint six feet above the ground! Its six-inch teeth were in a jaw that could open three feet wide, and

each massive hind foot, weighing eight tons, spread over an area of seven square feet.

Today, *Tyrannosaurus rex* stands watch over the Hall of Late Dinosaurs. Its real head has been replaced by a lighter replica for the purpose of exhibition. The enormous fossil head can be viewed in a nearby exhibition case. Because fossils are so fragile, we are currently replacing some of the real fossil bones with polyester reproductions. This will insure that we will have the real fossils for research in the years to come.

—Kate Bennett-Mendez



The fossilized Tyrannosaurus rex had to be carefully removed from the surrounding sandstone. Here a member of the expedition works on the fossil skull.

Barnum Brown

AMNH

Forever Young

Forever Young, a new film by the Academy Award winning director Robin Lehman, will be shown at 7:30 p.m. in the Main Auditorium, January 7, 1981. Robin Lehman is an Associate in Photography with the Museum's Department of Education.

Aging is an experience we all share, and growing older can be something to which we look forward. To many, however, the likelihood of living beyond the age of retirement is met with apprehension. In his most recent documentary, director Robin Lehman goes directly to the true experts on aging—the generation over sixty-five—and dispels many of the fears and prejudices associated with growing old.

The subjects of the film range in age from sixty-six to one hundred, and include a skydiver, an artist, a farmer, the founder of the A.C.L.U., a retired beekeeper, and a barnstormer. They reply with wit and candor to many of the questions all of us will face and many of us avoid.

Also profiled are people who have experienced the hardships of illness and loss. One woman, paralyzed from the neck down, proudly describes the progress she has made as a painter. Another man, confined to a wheelchair, still manages to shop for himself and live a remarkably independent life despite his handicap.

The responses captured by the film to the inevitability of aging and the hardships encountered, are a testament to the human spirit. They convey, very simply, a true appreciation of life.

Afternoon and Evening Lecture Series

The Department of Education is planning a series of lectures, workshops, and fieldtrips to be held this spring not only in the evenings but some afternoons as well. We invite you to explore, through the many offerings, subjects as varied and wide-ranging as Andean birds, Hopi Indian Snake dances, and performances by Asian puppeteers. Members are encouraged to take advantage of the adjacent coupon and mail in their registration early to avoid disappointment.

Participating, Donor, and Elected Members receive a discount to most lecture series. Members may register for two series at the Members' discount and any additional series at the regular price.

For more information, call the Department of Education at 873-7507.



Illustration by Margaret LaFarge from *Watching Birds* by Roger Pasquier, published by Houghton Mifflin Company. Copyright © 1977 by Roger I. Pasquier. Reprinted by permission.

Studying Birds Four Monday evenings starting February 23 7:00-8:30 p.m. Fee: \$20.00 (\$18.00 for Members). Four Ornithologists will present slide-illustrated lectures on various birds from around the world. Dr. François Vuilleumier, Curator in the Museum's Ornithology Department, will discuss *High Andean Birds*, looking at their adaptations to a harsh, high-altitude environment. Dr. George Archibald, Director of the International Crane Foundation, will detail efforts to save the *World's Endangered Cranes*. Dr. Thomas Lovejoy of the World Wildlife Fund will look at the *Birds of the Amazon*. Dr. Wesley Lanyon, Lamont Curator of Birds, will lecture on his studies of *Eastern and Western Meadowlarks*.

Symbol and Shadow: Puppets from the Asian Collections Five Tuesday evenings starting February 24 7:00-8:30 p.m. Fee: \$30.00 (\$27.00 for Members). Bettie Erda, who curated the exhibit *Puppets, Dance and Drama of the Orient*, will present five evenings of illustrated lectures accompanied by performances and guest speakers. Sam-Ang Sam, a graduate of the Phnom Penh Conservatory, will examine styles of performance in Cambodia and neighboring Thailand. Dr. Sarah M. Bekker, social psychologist and art historian, and Dr. Konrad Bekker, former U.S. Foreign Service Officer in Southeast Asia, will interpret the puppet theatre of the Thai peninsula. Jo Humphrey, founder and Director of the Yueh Lung Shadow Theatre, will discuss the development of shadow theatre in China, and with the company will perform a traditional Peking play with dialogue in English. Dr. Barbara S. White, Assistant Professor in the Department of Sociology at Daemen College, will explore the little-known form of shadow theatre from Kelantan in Malaysia. C. Lawson Reed, who has studied and performed with Indonesians, will discuss the Museum's Balinese shadow puppets, and then honor the memory of their collector, Margaret Mead, with a performance based on the Mahabharata.

Anthropology Through Films Six Thursday evenings starting on February 26. 7:00-9:00 p.m. Fee: \$30.00 (\$27.00

for Members). Main Auditorium. Six evenings of unusual films providing insight into cultural behavior will be introduced and discussed by Dr. Malcolm Arth, anthropologist and Curator at the Museum.

Feb. 26 *The Mursi* (53 mins), 1979, by Leslie Woodhead. The Mursi, a pastoral group, live in a remote part of southern Ethiopia. *Oh Dear Savior* (20 mins), 1979, by Parviz Kimiavi. A glimpse of a pilgrimage to the Shiite Shrine at Mashhad in Iran. Special guest: Bahman Maghsoudlou.

Mar. 5 *Koko: A Talking Gorilla* (1 hr 25 mins), 1978, by Barbet Schroeder. A documentary about a gorilla taught to communicate through sign language. Special guest: Dr. Ethel Tobach.

Mar. 12 *Last Days of Living* (58 mins), 1980, by Malca Gillson. Four patients in a special palliative care unit share their experiences in a moving film which touches upon the mystery and the reality of dying.

Mar. 19 *The Ritual of the Field* (2 hrs 15 mins), 1980, by William R. Geddes. Examines elaborate ritual behavior which permeates daily life of the Land Dayak of Borneo.

Mar. 26 *Handmaidens of God* (1 hr 30 mins), 1979, by Diane Letourneau. The convent of the Sisters of Sainte Famille in the Province of Quebec exists for the domestic needs of priests.

Apr. 2 *Shamans of the Blind Country* (4 hrs), 1980, by Michael Oppitz. A documentary epic on magical healing among the Northern Magar, an isolated hill tribe of west-central Nepal. (Note: Because of its unusual length, this film will start at 6:30 p.m.)

The Hopi Six Tuesday Evenings starting February 24 7:00-8:30 p.m. Fee: \$30.00 (\$27.00 for Members). Seymour Koenig, Adjunct Professor of Art History and Archaeology at Columbia University, and Hamet Koenig, anthropologist and guest lecturer on the Hopi Snake dances, will give a series of slide-illustrated presentations to augment the special exhibition, *Hopi Kachinas, Spirit of Life*, which opens February 9 in Gallery 3. Included will be: a look into the prehistoric village life of the Hopi; Kachinas, the supernatural spirits of the culture; a discussion of the Awatovi Mur-

als uncovered by archeologists in the mid-1930s, and a fascinating look at the Hopi Snake dances.

The World of Islam Six Monday afternoons, 2:30-4:00 p.m., or six Monday evenings, 7:00-8:30 p.m., beginning February 23. Fee: \$30.00 (\$27.00 for Members). Paul J. Sanfaçon, Lecturer in Anthropology at the Museum, will discuss the role of Islam in the history of the Mediterranean world and the Middle East. Using color slides, his talks will cover the Five Pillars, the role of Ayatullah-s and Mullah-s, and the Islamic system of education. Included are discussions of the role of Jews and other minorities in Arab lands, and the relations between nomadic and sedentary peoples.

Mammals of North America Six Monday afternoons, 2:30-4:00 p.m., or six Monday evenings, 7:00-8:30 p.m., beginning February 23. Fee: \$30.00 (\$27.00 for Members). Kenneth A. Chambers, Lecturer in Zoology at the Museum, will present a survey of interesting and unusual mammals found in the United States and Canada. Discussion will include identification, life-histories, habitats, economic importance, and folklore. In addition to slide-illustrated lectures, two of the Museum's magnificent exhibition halls will be visited.

Plant Life at the Edge of the Sea Five Tuesday afternoons, 2:30-4:00 p.m., or five Thursday evenings, 7:00-8:30 p.m., starting February 24 and 26. Fee: \$25.00 (\$23.00 for Members). With a series of illustrated lectures, Helmut Schiller, Lecturer in Botany at the Museum, will conduct an exploration of the Atlantic Coast. Commenting on tide pools, windswept scrub, and both rocky and sandy beaches, he will explain adaptations that enable plants to survive in the salty, sunbaked environment.

Foraging for Dinner: Identifying, Collecting and Preparing Wild Foods Six Monday evenings starting February 23 7:00-8:30 p.m. Fee: \$30.00 (\$27.00 for Members). Dr. Helen Ross Russell, author of the book, *Foraging for Dinner*, will present a series of lectures on wild plants that have been used as food by people throughout the ages. Utilizing slides and demonstrations,

plants will be examined, their cultural history noted, and methods of preparing the more common ones shown.

Animal Drawing Six Thursday evenings starting February 26. 7:00-9:00 p.m. Fee: \$45.00 (materials not included). Limited to 25 persons. Using exhibition halls after the Museum has closed to the public, students will draw from realistic habitat groups as well as mounted specimens.

Stephen C. Quinn, Principal Preparator-Artist in the Museum's Exhibition Department, will discuss animal anatomy, animals in art, field sketching, and how exhibits are made. Different mediums and techniques will be explored, with individual guidance given to each participant.

Insects: Earth's Most Successful Animals Six Thursday evenings starting February 26. 7:00-8:30 p.m. Fee: \$30.00 (\$27.00 for Members). An informal series of slide-illustrated talks on some of the fascinating aspects of the world of insects will be presented by Alice Gray, Museum Associate in the Department of Entomology. Included will be discus-

sions of structure, life-histories, environmental relationships, and the significance of insects to man.

Explore Weaving Six Thursdays starting February 26 7:00-9:30 p.m. Fee: \$75.00 (materials included). Limited to 22 persons.

Phyllis Mandel, weaver and Lecturer in Anthropology at the Museum, will lead participants in fundamental textile techniques, using simple equipment. Workshops will combine lectures illustrated with color slides and demonstrations of looms from Africa, Asia, the Americas, and the Pacific Islands. Participants will complete three weaving projects, for which all materials are provided.

Saturday Field Walks in Botany A series of six full-day walks beginning at 10:00 a.m. starting April 25. Fee: \$45.00. Limited to 30 persons. During the spring blooming period, walks will be taken to areas of botanical significance in New York City and the vicinity to learn about wild plants. Identification and ecology of the plants will be discussed informally by Helmut Schiller, Lecturer in Botany.

I would like to register for the following lecture series.

	Fee	Members Fee*
Studying Birds	() \$20	() \$18
Anthropology Through Films	() \$30	() \$27
Symbol and Shadow	() \$30	() \$27
The Hopi	() \$30	() \$27
The World of Islam	() \$30	() \$27
North American Mammals	() \$30	() \$27
Coastal Plant Life	() \$25	() \$23
Foraging for Dinner	() \$30	() \$27
Insects	() \$30	() \$27
Animal Drawing	() \$45	no discount
Explore Weaving	() \$75	no discount
Botanical Field Walks	() \$45	no discount

Name _____

Address _____

City _____

State _____

Zip _____

Daytime phone _____

Membership category: _____

I enclose a check in the amount of \$ _____ payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to: Registrar, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Please note: no single evening tickets will be sold.

*Discount for Participating, Donor, and Elected Members only.

Museum Notes

New Exhibitions

Origami Holiday Tree. (Roosevelt Rotunda, second floor) Through January 6 Asian paper folds adorn the twenty-five-foot tree

The Gardner D. Stout Hall of Asian Peoples. The Museum's newest permanent exhibition hall, containing over three thousand works of art and artifacts

Profiles of the Past: The Geology of Three Southwest Canyons. (Gallery 77, first floor) Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand, Bryce, and Zion canyons.

Flying Fantasies: Butterflies and Moths. (Akeley Gallery, second floor) Photographs of butterflies and moths: their life cycles, coloration, and beauty

Books on Asia. (Library Gallery, fourth floor.) A selection of rare books used to research the new Hall of Asian Peoples

Programs and Tours

Natural Science Center.

The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

Star of Wonder. For more than forty years this show has been delighting New York holiday audiences. It takes Planetarium visitors back two thousand years for a look at the sky of Bethlehem at the time of Jesus' birth, and speculates on the nature of the "star of wonder" that guided the three wise men.



The End of the World is the sky show at the Hayden Planetarium beginning January 7. Sometime in the future the world will end. How it will end — whether by the death of the sun, collision with an asteroid, the coming of a new ice-age, or nuclear Armageddon — is open to debate. *The End of the World* takes a dramatic look at the current theories.

Sky show times
Weekdays: *Star of Wonder*, 2:00 and 3:30 p.m.; *The End of the World*, 1:30 and 3:30 p.m.

Weekends: hourly, 1:00 through 5:00 p.m.
Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828 or 873-8829.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Stars of the Season. Wednesday, 7:30 p.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

The Art of Aldo Sessa. Surrealist paintings on display on the first floor of the Planetarium, December 11, 1980 through February 21, 1981.

The Wolf and the Whittail, a film about predator-prey relationships, will be shown in the Man and Nature series, January 10-11, from 2:00-4:00 p.m. in the Auditorium. Last Stand in Eden and The Great Blue Heron will also be shown.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check rooms are located in the basement next to the cafeteria, and on the second floor. There is a 40¢ charge per coat.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852
Southwestern Research Station, Portal, Arizona, 85632.

Workshops for Young People

Another series of *Workshops for Young People* is being offered by the Department of Education this spring. Intended for children in grades 4 through 7, the workshops are designed to give first-hand experience in various areas of natural science and anthropology. Museum instructors and experienced educators conduct the workshops, using the Museum's excellent resources, exhibits, and labs.

You may use the adjacent coupon to register for courses. **Please note that only Participating, Donor, and Elected Members may take the Members' discount for courses.**

For more information, please call the Department of Education at 873-7507.

Exploring with the Microscope. Grades 4 through 7. Six Saturdays, February 28 through April 4. 10:15-11:45 a.m., or 12:15-1:45 p.m. Fee: \$20.00 (\$18.00 for Members). Open your eyes to a hidden world through one of the scientist's most practical tools, the compound microscope. Work consists of independent investigation for all levels of experience. A variety of cells and their structures are explored, from blood cells to plant cells to single-celled organisms. Taught by Ismael Calderon, Coordinator of the Junior High School Natural Science Project in the Museum's Department of Education.

Photographing People: Beyond the Snapshot. Grades 5 through 7, plus parents. Six Saturdays, February 28 through April 4, 2:30-3:45 p.m. Fee: \$20.00 (\$18.00 for members). Taking pictures of people isn't easy—they can walk away, talk back, and do all sorts of things that trees, flowers and buildings just don't do. In this course, parents and their children will learn together how to capture on film the uniqueness of these very special subjects. Students will also explore the basics of using a camera and printing pictures. Taught by Willa Zakin, a professional photographer trained in anthropology, who specializes in the use of photography in the social sciences.

The Arts of Asia. Grades 5 through 7. Six Sundays, March 1 through April 5, 10:30-11:45 a.m. Fee: \$20.00 (\$18.00 for Members).

The richness and diversity of cultures which exist in Asia are on view in the Museum's exciting new Gardner D. Stout Hall of Asian Peoples. In this class, students will have an opportunity to try their own hands at many of the arts and crafts techniques — from printing, to textiles, to ceramics — which are among the unique contributions of these ancient peoples. Taught by Adele P. Unterberg, Fine Arts teacher, and by Phyllis Mandel, Senior Instructor in the Museum's Department of Education.

Games People Play. Grades 5 through 7. Six Sundays, March 1 through April 5, 1:00-2:30 p.m. Fee: \$20.00 (\$18.00 for Members).

A wide variety of toys and games are used by people throughout the world. Students will have a chance to learn about and play with games and toys from a wide range of cultures, and will also have a chance of making their own modern-day versions of many of them. Taught by Jane Thompson, World History teacher, and Phyllis Mandel, Senior Instructor in the Museum's Department of Education.

I would like to register for the following Workshop(s):

Workshop(s): _____

Student's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category and number: _____

I enclose a stamped, self-addressed envelope and a check for \$ _____ payable to the American Museum of Natural History. Mail to: Workshops for Young People, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Remembering Margaret Mead

In October the Museum presented the fourth annual Margaret Mead Film Festival, and once again it proved itself a great occasion for public education. As a pioneer in the use of film for anthropological fieldwork, Margaret Mead was the inspiration for the Festival and helped shape it during its first two years. Her colleagues think of her frequently and in many different contexts, but it is the Film Festival carrying her name that provides one of the strongest associations. It was at the second Festival, in September 1978, that Margaret Mead made her last public appearances. That these were in an educational program bringing anthropology to the attention of a broad public audience is significant. In spite of debilitating illness and discomfort, she continued to carry the weight of the Festival on her shoulders for five days with that full combination of intelligence, wit, and energy the world had come to expect from her. She seemed to draw strength daily as the Festival progressed, and, although fatigued at its conclusion, her sense of satisfaction at the achievements she had brought about was apparent as she received the accolades of a cheering audience. Two months later she died.

A memorial service was held in the Museum's Auditorium where twelve speakers offered memories of her, expressing some of the emotions felt by all. Mixed with the deep sorrow at her loss was a profound sense of respect for who she had been and an immense gratitude for all that she had done. Those who spoke, however, were only a fraction of those who had something to say.

At the Margaret Mead Film Festival this fall, a man offered me a piece of paper which he said was a gift. At that moment I was unaware of what was written on the paper, but I sensed that he was deeply moved and that the moment was important for him. When I opened and read it I understood. It was a poem about that last day at the 1978 Festival.

Two years earlier a woman had sent a poem written after attending the memorial service. Both give voice to the feelings and thoughts of many others.

— Malcolm Arth



Margaret Mead receiving applause at her last public appearance, the 1978 Film Festival. Standing with her is Malcolm Arth, Curator and Chairman of the Department of Education.

MARGARET MEAD — '78

As we stood with tears

streaming down

our cheeks

We gave you the last standing ovation.

You gave us so much more

We were saying "Thank you."

Never thinking it was "Good-bye."

Majestic woman of stature

even now, the tears

fall on this page

Please, you tough-minded, cantankerous,

Straight-thinking, analytical genius

Forgive us our emotions

Somehow, your message echoes still, and it says,

"Get to the point!"

So I will — "Margaret, we love you!"

Donald T. Ballou
© 1980

MARGARET

(in memory of Dr. Margaret Mead)

Margaret, I went to your memorial
and I missed your being there
I'm a student of your mind
a follower of your philosophy
and I'll go on with teachings
you set forth for all the world to learn;
But Margaret, your self will be missed
Whether in lecture or classroom
on stage or street, between pages
of books or frames of film
you were the intimate professor
close enough to collate the curious and damn the prejudice
of my mind and a multitude of others.
A Mother to so many meta-forces
Margaret, (you see, I feel close enough to call you that)
you didn't age the way the rest of us do —
you managed to grow older for the sake of youth,
every generation was new again in you
Your forked cane still taps toward tomorrow
through the hallways of research
from Bali to Bateson; New York and new minds
Womankind is grateful to you,
your example is a mighty milestone for that mystique
and men revere the argument you gave them,
twelve chairs today voiced this total respect
and I attended with notebook, heart and mind
as if to hear and see you there. But now you're of the audience —
You're the thunder in our applause, Margaret

Lenora Lowe
© 1979

Sun

Mon

Tue

Wed

Thu

Fri

Sat

January
1981

Call for Volunteers!
If you're interested in volunteering at the Museum, in conjunction with the new Gardner D. Stout Hall of Asian Peoples, please call Miriam Johnson, 873-1300 ext. 538 for an appointment.

1

2

3 11:00 a.m. The New York Map Society. Rm. 129

Quadrantid Meteor Shower

4

5

6

New Moon (not visible)

7 7:30 p.m. *Forever Young*. A new film by Robin Lehman. Auditorium. (see article page 4) Free.

7:30 p.m. The Amateur Astronomers Association. Education Hall

8 7:00 p.m. New York Audubon Society. Education Hall.

9

10 2:00-4:00 p.m. *Man and Nature Film Program*. Auditorium. *The Great Blue Heron*, *The Wolf and the Whittail*, *Last Stand in Eden*. Free to Museum visitors.

11 2:00-4:00 p.m. *Man and Nature Film Program*. Auditorium. *The Great Blue Heron*, *The Wolf and the Whittail*, *Last Stand in Eden*. Free to Museum Visitors.

12:45 p.m. American Cetacean Society. Rm. 319.
2:00 p.m. New York Shell Club. Rm. 426.

12 7:30 p.m. Animal Behavior Society. Rm. 129

13 8:00 p.m. Linnaean Society. Education Hall

First Quarter (half moon)

14 7:00 p.m. *Odetta*. Folk Music performance. Auditorium. (Article page 4 for ticket information.)
7:30 p.m. New York Mineralogical Society. People Center.

15 7:00 p.m. *An Introduction to Dr. Martin Luther King Jr.* Auditorium. For information call 873-1300, ext. 525.
8:00 p.m. New York Microscopical Society. Rm. 419

16 2:00 p.m. *Joy in Everyland*. Dance performance. Auditorium. For the elderly by reservation only. For information call 873-4737.

17

18 2:00 p.m. *A World of Ethnoamerican Dance Theatre*. \$1.00 for Members, \$4.00 for non-members. Auditorium. (See article and coupon page 3)

2:00 p.m. New York Paleontological Society. Rm. 426.
2:00 p.m. New York Turtle and Tortoise Society. Rm. 129.

19 8:00 p.m. New York Entomological Society. Rm. 129.

20

Full Moon

21 7:30 p.m. *The Grand Canyon. Members' Program with Sidney Horenstein*. Auditorium. Free to Members \$3.50 for non-members. (See article page 1)

22

23

25

26

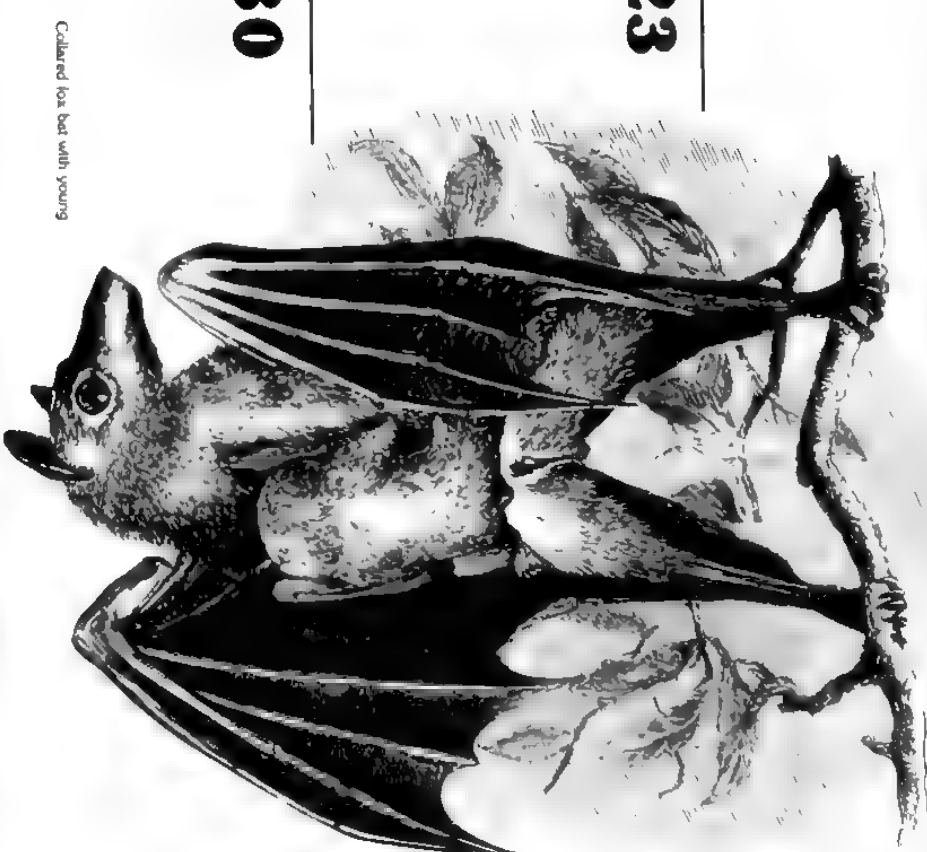
27 8:00 p.m. Linnaean Society. Education Hall.

Last Quarter (half moon)

28 7:00 p.m. *Tahuan-tinsuyo*. Music of the Andes. Auditorium. (Article page 4 for ticket information.)
7:30 p.m. Lapidary and Gem Society. People Center

29

30



Colored fox bat with young

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History | Vol 5, No 2 February 1981



Whale Tales

Canada's Touring Museum for Children presents a participatory play and program about whales
Page 3

Kachina Culture

Hopi Kachina. Spirit of Life, a nationally touring exhibition, opens at the Museum February 9. Explore Hopi culture from carved kachina figures to the rare Awatovi wall murals.
Page 2

Travels with Ian

Ian Tattersall, Assistant Curator in the Department of Anthropology, discusses the traumas of getting to the field in his *Letter from the Field*
Page 5

Robeson, Rhythm, and Roots

February is Black History Month, and the Department of Education has organized a series of special weekend programs
Page 3

Holiday Films

A series of five, short, family films on the world of nature will be shown twice on Monday, February 23, Washington's Birthday
Page 4

Visions at T-Minus Zero

Wednesday, February 25, at 7:30 p.m.
Sunday, March 1, at 2:00 p.m. (Family Program)
Auditorium

From the time people first observed the heavens, the idea of space and the wonders of infinity have stirred within them. Answers were sought where questions were barely understood, generating legends, myths, and philosophical musings. In our day and age much has been done to explore the possibilities of space through the medium of film.

This month, for the Wednesday Evening Members' Program, award-winning filmmaker John Teton will present *Visions at T-Minus Zero*, his nationally acclaimed program of films with slide-commentary. It will also be presented Sunday, March 1, in a specially tailored version for the Family Members' Program.

The program, integrating science, philosophy, history, and the arts, is a reflection of the vast spectrum of

peoples' interaction with the universe. It consists of ten short films and film segments from as long ago as 1902 and as recently as 1978. Teton integrates them with perceptive commentary and slides which place the films into a cultural and artistic context. It is a history of images of space conceived in awe, humor, and horror — in scientific inquiry and spiritual inspiration.

The conceptions of the universe outside the earth's immediate environs vary throughout the program, from the comic book absurdity of a 1901 film, to NASA's *Spaceborne*, in which every foot of film has been compiled from NASA's files, recreating for the audience a real-life trip to the moon. Also included is Teton's own film, *B'raesheet* (Hebrew — "in the beginning"), which has won six film awards. The programs are free to all

View from the Voyager 1, taken November 3, 1980, showing Saturn with two of its moons, Tethys and Dione, and the shadow of Tethys cast on the surface of the planet. Join us for John Teton's presentation on views of space over the ages.

categories of Membership (your membership card is your ticket of admission). Non-members may purchase tickets for \$3.50 at the Auditorium door. Participating, Donor, and Elected Members may park free, up to the capacity of the Museum lot for the Wednesday Evening Program only. Coffee and tea will be served outside the Auditorium before the evening program begins.



Theodore Roosevelt in Africa

AMNH

Bully For Us!

The Museum and the Roosevelt Hotel are jointly arranging an *Heirloom Celebration* honoring Teddy Roosevelt, the American Museum of Natural History, and the newly renovated Roosevelt Hotel. A party for Museum Members and their guests is planned at the Hotel (located on Madison Avenue at 45th Street), on April 14 from 5:30 p.m. until 8:00 p.m. The evening program, which will highlight Museum collections and

activities, will include cocktails, hors d'oeuvres, music, entertainment, Theodore Roosevelt memorabilia, and much more. Members will be receiving invitations to the celebration this month. The cost of the party will be underwritten by the hotel, with all proceeds going to the Museum. Tickets will cost \$25.00 per person, \$40.00 per couple, and are tax deductible. Call (212) 873-1300, ext. 546, 429 for more information.

Hopi Life

A nationally touring exhibition, organized by the California Academy of Sciences, will come to the Museum this month. *Hopi Kachina: Spirit of Life*, opening February 9 in Gallery 3, will give Museum visitors an opportunity to travel to the windswept mesas of northern Arizona. Here, for more than 900 years, the Hopi have lived in pueblo villages and followed the centuries-old practice of cultivating corn, beans, and squash. America's oldest continuous culture, their longevity has often been attributed to the strong unifying thread of their religion which dictates appropriate action in all areas of life.

One of the major aspects of the Hopi religion, and the focus of the exhibition, are the kachinas, friendly spirit messengers who carry Hopi prayers to the deities, insuring rain, good weather, and bountiful harvests. Each year, between December and July, the kachinas, who live on the San Francisco peaks north of Flagstaff, come to the

mesas to give guidance and help to the Hopi during the critical growing season. Specially initiated tribe members impersonate the kachinas, dressing in elaborate costumes and assuming the prestige and power of the supernatural. During one ceremony, dancing kachinas give out *tihus*, small, carved wooden figures commonly called kachina dolls, to the children to teach them about the Hopi way of life.

In the exhibition, the visual focal point will be two large scale models of mesa villages with more than two hundred carved kachina figures depicting two important dances: the February Bean Dance, where hundreds of tribesmen dressed as kachinas move through the village plazas, expressing the hope for successful germination of their seeds, and the July Home Dance, to thank the kachinas for their help before they return to their home in the San Francisco mountains.

Sounds of preparations for a

kachina ceremony will emanate from the hatchway of a full-sized kiva, the underground ceremonial chamber used by the Kachina Cult for practice and preparatory rituals. There will also be two rare kiva wall murals on display, from the archeological site of Awatovi. These are the earliest known representations of the kachinas, made with colors from iron oxides, charcoal and clays, and painted on whitewashed plaster.

In conjunction with the exhibit, a lecture series has been added to the Education Department's spring courses. *The Hopi* will present an in-depth look at the culture, from the Awatovi Kiva Murals to the Hopi Snake Dances. For more information call 873-7507.

Tawa, the Sun Kachina, a carved Hopi figure, represents a kachina spirit acting as messenger to the deities

California Academy of Sciences



March at the Museum

- | | |
|---------------------|--|
| Sunday, March 1 | <i>Visions at T-Minus Zero</i> (See article page 1) |
| Saturday, March 7 | <i>Hopi Films</i> 1:00 to 4:00 p.m. Auditorium Free
<i>Identification Day</i> 1:30 to 4:30 p.m. Education Hall. Free |
| Wednesday, March 18 | <i>Shanwar Telis: Shipwrecked Jews of India</i> Film and lecture with Dr. Johanna Spector. 7:30 p.m. Auditorium. Free to members, \$3.50 for non-members |
| Saturday, March 21 | <i>Underwater Films</i> 1:00 to 4:00 p.m. Auditorium. Free
<i>A Tale from Two Whales</i> (See article page 3) |
| Sunday, March 22 | <i>How to Prove a Mystical Experience is Real</i> Lecture with Dr. Wendy Doniger O'Flaherty 2:00 p.m. Auditorium Free |
| Saturday, March 28 | American Littoral Society Symposium. See March Rotunda for ticket information |



Simenel galago

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 2
February 1981

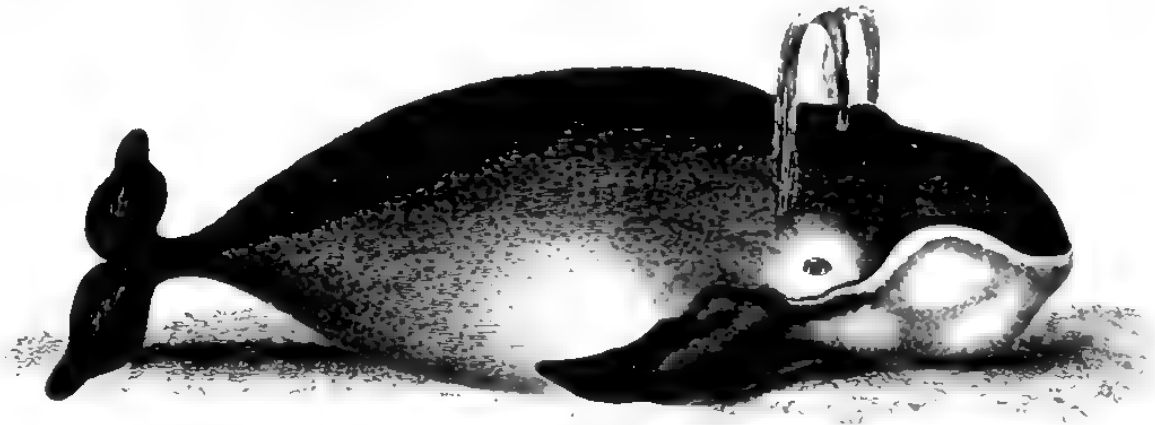
Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
Mark Abraham — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1980 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

A Tale from Two Whales

(for children ages three to seven)
Saturday, March 21 and Sunday, March 22
11:00 a.m. and 2:30 p.m. Education Hall
Free for Members \$2.00 for non-members



Canada's Touring Museum for Children is coming to New York to present a participatory play and program about whales and whale biology. The program, designed for children ages three to seven, begins with a play about the adventures of Baby Humpback. In the play, children will sing along with Baby Humpback, join in her

search for krill (the food of baleen whales), and help her as she escapes from the clutches of that notorious whale hunter (and Pirate!), Colin Cut Throat Slides, a film of a beluga whale, and sound recordings of humpback whales are all used to help tell the story. At the end of the play, children will be invited to touch a

whale skull and a narwhal tusk, examine krill under a microscope, compare a human rib to a whale rib, and draw, color and cut out a whale of their own. Please use the adjacent coupon to register for this innovative program. Early registration is advised

Please register me for A Tale From Two Whales
Please indicate a first, second, and third choice of times
This program is designed for children ages three to seven years old

11:00 a.m. Saturday, March 21
2:30 p.m. Saturday, March 21
11:00 a.m. Sunday, March 22
2:30 p.m. Sunday, March 22

Number of children: _____ (Children must be accompanied by an adult)
Number of adults _____
Participating, Donor and Elected Members are entitled to up to four free children's tickets and two free adult's tickets; Associate Members are entitled to one free child's ticket and one free adult ticket. All other tickets are \$2.00

Name _____

Address _____

City: _____ State: _____ Zip _____

Daytime phone _____

Membership Category _____

Please mail with a self addressed, stamped envelope to: A Tale From Two Whales, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Black History Month



Brown Brothers from The Black Book

In celebration of Black History Month, the Department of Education's African-American Programs has put together a series of weekend events including drama, workshops, slide-lectures, and concerts. By highlighting the diversity and cultural richness of peoples of African descent, it will reflect some of the worldwide contributions Black people have made.

Safari East will present a special Tribute to Paul Robeson on Sunday, February 22, at 2:30 p.m. in the Auditorium. Taped portions of Robeson's speeches and songs will be interspersed with live poetry readings, a jazzband performing original pieces in tribute to him, and a Gospel Choir singing his favorite spirituals.

Much of Black history has been passed down through song. To commemorate and insure the continuation of the oral tradition in the younger generation, a concert of African-American music will be presented to children, Sunday February 15, at 3:00 p.m. in the

Education Hall. Made up of field hollers, work songs, spirituals, rhythm and blues, it will be performed by Don Oliver and Steven Freeman of the Goodtime Duo. Mr. Oliver has appeared on and off Broadway, with Voices Inc., and performs regularly in New York City. (A Young Audiences production.)

Other events will include lecture demonstrations on African-American Cuisine, African Toys and Games, Music and Folk Traditions of East Africa, and Patterns, Symbols and Signs in African Art, to name a few. In addition, a one-man show entitled Unsung Heroes with Lou Myers will dramatize several prominent figures in African-American history. Films on the heritage of Black Peoples will be shown throughout each weekend. Check the calendar in this issue for full program listings.

All programs for Black History Month are presented by the Department of Education, and are free to Museum visitors.



Mask from the Bobo tribe in Volta combining the human face with the hornbill bird, which is believed to have special spiritual power

Bringing Back The Gorilla Group

Three of the completed gorillas
The life-like quality and
individuality of each is a credit
to Akeley's skill in taxidermy

Carl Akeley/AMNH

The story of the gorilla group exhibit in the Akeley Hall of African Mammals is, like the rest of the exhibits in the hall, the story of the will and dedication of Carl Akeley, the Museum's visionary taxidermist.

In 1909, while hunting in Africa for the Museum, Akeley was badly mauled by an elephant. During his long recovery he began to dream of an African Hall in New York City which would permanently record the already vanishing wildlife and environment of Africa. He wanted to mount the animals in lifelike poses and to accurately represent their habitats down to the most minute detail.

In 1921, still dreaming but without the money or the go-ahead for the hall, Akeley organized his fourth expedition to Africa. His goal was to shoot and bring back gorillas to be mounted at the Museum.

Not long after seeing his first gorilla tracks on Mt. Miken, Zaire (then the Belgian Congo), Akeley saw and shot a gorilla behind a bush. The gorilla fell and came careening down the mountain towards a chasm to his right. He stood helplessly watching, afraid he had killed one for nothing. But, as luck would have it, a lone tree at the edge of the cliff stopped the animal's fall. It was to that tree that Akeley tied both the gorilla and himself to measure it for future taxidermy and to skin the beast. With only his jackknife and the iron knife of a porter, he skinned and roughly skeletonized the body. At camp the next day, he prepared and salted the skins and collected all of the bones so that he would be able to make a perfect model of the animal back in New York. In addition, he photographed the hands, feet, and head, and made a death mask of the animal's face.

By the end of the safari, Akeley had shot four gorillas



and filmed many others so that he could realistically immortalize them with his taxidermy. At the spot where Herbert Bradley, an expedition-mate, shot the largest male, Akeley saw "the most beautiful view in all of Africa." Then and there, he decided the search for an appropriate background and setting had ended. It would mean arranging another safari to Africa to bring a painter to the spot to capture its beauty, but it would be worth it.

Back at the Museum he began the task of mounting the gorillas as he had seen them. Armed with films, stereoscopic photographs, complete sets of

measurements, skeletons, the skins, casts of hands, feet, and faces, he set out to teach the world about gorillas.

The Akeley method, which revolutionized taxidermy, was to create a manikin over which the tanned skin was stretched, rather than to stuff the animal. To create the manikin, a clay sculpture was first made over the gorilla skeleton. When the model was in the desired position, and accurate according to the field studies, Akeley made a plaster mold of the clay sculpture. The actual manikin was then made from this. A thin coat of hot glue was applied to the inside of the

mold, then muslin, and more glue to work the muslin into every detail of the mold. Next the surface was covered with papier-mâché and a layer of wire cloth. A second layer was added to the manikin by repeating the process. When hardened, the resulting manikin was both light and durable. The tanned gorilla skin was then stretched over the manikin, with flour paste and glue to hold it in position.

Akeley's attention to detail in taxidermy is evidenced by the painstaking way he finished off the first-killed gorilla. Since he had skinned it under particularly poor conditions, some of

the animal's hair had slipped away. He had saved it, and each individual hair was re sewn onto the gorilla's chest.

Each gorilla was mounted in this fashion and soon after put on display. It is a tribute to Akeley's skill as a taxidermist that each looked so individual. It wasn't until 1926, however, that Akeley got back to Africa with funding for the hall and artists to record the gorilla habitat.

The creation of the habitat, and the completion of the gorilla exhibit, will be the subject of this column in the next issue.

— Kate Bennett-Mendez

Ocean Chalets

Selections from a large collection of shells recently acquired by the Museum will be the Arthur Ross Exhibit of the Month, in the second floor Roosevelt Rotunda. Donated by Thomas and Virginia Munyan, the collection consists of approximately 2,200 specimens. More than 400 species are represented, some of which are new to the Museum's previous holdings. The Munyans originally acquired the collection during the past twenty-five years by selective purchase from dealers and personal collecting trips all over the world. Considered by specialists to be one of the

finest private collections in the world, the value is found both in its beauty and in its inherent scientific value. It is rich particularly in growth series, rare color forms, and unique morphological freaks.

The collection is so large that only a portion of it will be on display. It will eventually be housed in the reference department, considerably enhancing the Museum's own collection of this family of marine gastropods. It shows the extent to which an amateur can, over a period of time, collect and create an extensive scientific resource.



Vacant Stupella Cone. Small one bedroom with spiral staircase. Ocean view. One previous owner. Rented on occasion to select Crustaceans. For this and other available spaces, see the shell exhibit, Glones of the Sea, through March 1

Family Film Festival

On Monday, February 16, Washington's Birthday, at 1 and 3 p.m., a series of five short family films will be shown in the Main Auditorium. Presented by the Media Center for Children, the films offer an enjoyable and diverse look at the natural world around us.

Cheechako's First Day, by Derek Muir. The portrait of a four-month-old polar bear's venture into the public eye in the Oregon Zoo.

See, by Robin Lehman. A close-up examination of wonderful and varied undersea creatures.

Oh Brother, My Brother, by Carol and Ross Lowell. A delightful portrait of two young brothers with the give and take of their relationship.

The Perils of Priscilla, by Carroll Ballard. The adventures of a domestic cat, from the point of view of the cat. Made by the director of *The Black Stallion*.

The Wolf and the Whitetail, by Marty Stouffer. Their interaction with the environment, and the predator-to-prey relationship of these two animals.

Total running time will be 75 minutes. The program is free to all Museum visitors.

Stalking the Wild Comoros

Ian Tattersall, Associate Curator in the Department of Anthropology, is a physical anthropologist studying primates. He claims that not once in the last ten years has he gone into the field and accomplished what he set out to do. His research on primates, particularly lemurs, has taken him into areas of the world plagued with political upheaval. The subsequent difficulties he encounters require him to maintain a certain flexibility about his objectives.

The path of fieldwork, in my experience, is seldom if ever smooth. Take, for example, one of my less hair-raising summers:

Prologue: January, 1977
Great rejoicing. Grant funds have been received to allow me and my colleague, Bob Sussman of Washington University, to study the ecology and social organization of lemurs in the Comoro Islands, which lie in the channel separating Madagascar from Africa. Lemurs, monkey-like members of the primate family, are found only in Madagascar and on the Comoros.

May 12 Paris. I have made my rendezvous here in Paris with Bob and his wife Linda, en route to Moroni, the capital of the Comoros. At least so we thought. The airline told us that, reconfirmed reservations notwithstanding, it no longer made the flight — hadn't, in fact, for three weeks. How else could we get to the Comoros? The airline allowed as how it didn't really know. Except, perhaps, if we went to Réunion, a French island in the Indian Ocean to the east of Madagascar. There we might be able to get on a military flight to Mayotte, the most southerly of the Comoros. Mayotte has remained French, while the other three islands have unilaterally declared their independence from France. I know for a fact that the military flights operate (I checked with the French embassy in Washington before leaving) so it seems worth a try.

May 15. Réunion. So here we are in one of the world's most isolated and expensive spots. Nobody knows much about getting to Mayotte, but everyone knows that only French citizens can fly on French military aircraft. Now they tell us. Could we get to Mayotte via Madagascar? Air Comores is rumored to be making the trip, but we can't persuade anyone to issue us tickets. Besides, the Malagasy won't give me a visa. Most embarrassing. Here we are at the end of the earth — and of our tickets — and no way to get where we want to go. So we've changed our objective. We're only a couple of hundred miles from the island of Mauritius, and on Mauritius I know there are monkeys. Okay, so they're not lemurs, but they are primates, and nobody knows anything about them. There is one problem: visas. With my British passport I don't need one, but Bob and Linda do. There's no Mauritian consulate here, so I'll have to fly to Mauritius and try to make the arrangements.

May 20. Mauritius. I've flown here alone with the Sussmans' passports in my pocket, on the assumption that the Mauribans, being good-natured people, will

stamp visas in them. Not so simple, after all. The request is a little unusual, but, yes, the visas can be issued here. The applicants, however will have to sign the forms requesting them. But they can't sign them; they're not here. Why not? They don't have visas... We compromise. Someone will be waiting at the airport to admit them if we specify the flight. The visas will be issued later.

May 21. Réunion. Bob and Linda needed their passports to leave Réunion. I had to fly back to bring them.

May 27. Mauritius. With visas granted, the time has come to study monkeys. The authorities couldn't be more accommodating, but the monkeys live mostly on private reserves, set aside for deer-hunting. When does the season open? In two days, naturally. Hardly the best circumstances for monkey watching, what with hordes of beaters and shooters thrashing through the undergrowth, loud bangs on all sides. Besides, we wouldn't be welcome in the hunting areas because we might frighten the deer!

Through new friends, and friends of friends, we've been introduced to the management of Médière Estates, a large sugar company with extensive land holdings. Yes, they have an area they're not shooting this year, and yes, we can study the monkeys there. It is a marvelous and splendidly civilized place to do fieldwork, and Bob, in particular, has taken a shine to the monkeys.

June 28. Dar-es-Salaam. The study has gone remarkably well, but I at heart remain an obdurate lemurologist: I hanker after seeing again my lemurs, the beasts I'd studied two years before. Apparently, I've been told, it may be possible to fly to Moroni from Dar-es-Salaam, on the Tanzanian coast; and, after much hassle, I have persuaded a travel agent to write me a ticket.

I arrived here in the late evening, only to find that all the hotels were full of Lutheran ministers, convening for a missionaries' convention. I was eventually able to locate a dilapidated beach hotel, miles out of town, and finally today the local Air Comores agent admitted to the existence of a flight and confirmed me on it.

June 30. Moroni. Yesterday, with take-off time well past, there was still no sign of the aircraft. At last a battered DC4 taxied up to the ramp and stopped. Nobody got out. Nobody got on. Two hours later, several waiting passengers were invited to board, myself included. It soon appeared, however, that the aircraft was already packed. Even the aisle was blocked with crates and metal drums. Somehow, all

squeezed in, the doors were closed, and we taxied out to the far end of a super-long, sea-level runway. The pilot ran up the engines, released the brakes, and we rumbled slowly forward. The verges of the runway ambled by the windows, and what seemed like an age later, we were still on the ground. Finally, just before my lower lip was entirely bitten through, yards short of the runway's end, we staggered into the air. A friend of the pilot later told me that we took off at 30% over maximum gross weight. Finally the silhouette of Kartala, the volcano which dominates the island of Grande Comore, loomed out of the darkening sky: Moroni at last.

I began to wonder now if this had been such a good idea after all: Mauritius had been ideal, but the Comoros were in political turmoil, and the reports I'd heard weren't encouraging. What's more, I had no visa (although one is needed, the Comoros have no external representation!). My hope was to get the next morning's early flight to Mayotte, the one island that had stayed French, but my passport was taken away at the airport, and I had to try to get it back. The DC4 winged its way toward Mayotte without me.

As I walked with some trepidation toward the Immigration Bureau, charred pieces of paper wafted in the breeze around me. It turned out that the government had literally just burned all paper records of its colonial heritage and gone into a state of near-catatonia. Almost all government offices and services were closed, and everywhere the whitewashed walls were daubed with the red slogans of the Revolutionary Youth. Would I ever see my passport again? Yes, as it happened: a morning's fast talking got it back with a visa, but I'm less and less inclined to want to take advantage of it. The political situation is unnerving, to say the least, there are no lemurs here for me to watch, and the next plane to Mayotte isn't for a week. In a couple of days there will be a flight to Mohéli, the next island in the chain: it seems like a good idea to go there and watch my lemurs. I can catch the plane to Mayotte

there next week, as it stops on its way.

July 7. Mohéli. Nothing is functioning here except a band of teenage thugs known as the Revolutionary Youth. Where could I stay? The revolutionary Youth suggested the hotel. There had never been one here before, but on investigating, it turned out to be a place I knew well: the former residence of the local director of the islands' one large agnicultural company. When last I had seen it, two years ago, it had been freshly painted, beautifully furnished, with electricity and hot water. No longer. It looked like a ruin abandoned for twenty years: no electricity, no water at any temperature, almost no furniture, but junk and filth aplenty. I could sleep on a mattress in a corner of what had been the master bedroom, surrounded by rubbish and rats. Still, there was a roof, and it wouldn't be for long.

I went to see the Air Comores agent, to reconfirm my booking for Mayotte. No problem there, Monsieur, but may I see your exit visa? What exit visa? Nobody had mentioned any such thing before. One is required, Monsieur, before you can leave the island. Where do I get one? I could see it coming: the Revolutionary Youth.

My first attempts to get an exit visa failed. It seemed I was completely at the mercy of a bunch of power-crazed sixteen-year-olds. I could take some solace from my lemurs, but being active only at night, they left me with nothing to do all day but wonder whether I'd get off this benighted speck in the middle of the ocean. Even now, at the airstrip in the early morning, with my baggage and a precious piece of paper in my hand, I won't feel comfortable until I'm on the plane and well out of here.

July 8. Mayotte. Mayotte at last. One of the world's most neglected corners, there is harbored here a detachment of the Foreign Legion, a lycée, and a handful of French officials. Almost everything is in short supply, so it's no surprise to learn that there's no gasoline. The pickups that serve for public transport can't run, and the car I'd schemed so long to rent is

useless. What's more, I'll be living several miles from my study site, on the other side of a mountain ridge. There's no kerosene for cooking, either. But come to that, there's not much food: the Legion feeds itself, and the officials have their lines of supply set up with France (via Réunion, of course). The important thing is that I finally have the freedom to do my work. I have somewhere to live, and a couple of months of manioc, breadfruit, and rice when I can get it, won't kill me.

I will record the behavior of the lemurs from 6 a.m. to 6 p.m., and need some extra time in the morning to find them. Add two hours to walk to the site, and two hours to get back home, and it will make for very long days. Still, the worst of it will only be until the promised gasoline arrives.

Epilogue. December, 1980
The study was completed, at least for that season. It found, very briefly, that these particular lemurs were the only known primates not to have regular activity patterns. All other primates keep regular hours either in daylight or at night, with the pattern being uniform throughout a species. Groups of these lemurs would keep random hours, both at day and at night, never settling on a regular pattern.

There never was any gasoline, so I must have walked a thousand miles. But the fieldwork got done, which is rarely, these days, a foregone conclusion. On the whole, it wasn't such a bad trip. Looking back on other field experiences, it might have gone a lot less smoothly.

I eventually flew off the island with a man who was singlehandedly supplying the island from Kenya in a single-engine Cessna. As his plane was empty, he agreed to fly me out on his return flight. Although he may be less willing to take on passengers when his plane is fully loaded, he'll be someone to keep in mind if I ever do try to return. Assuming, of course, that I can find him.

Ian Tattersall



Membership Highlight Tours

The Membership Tour program is designed to give Members an in-depth look at some of our most fascinating collections and exhibition halls. All tours are led by volunteer guides from the Museum Highlights Tour program. In March and April, the following tours will be offered.

Dinosaurs. Why did dinosaurs become extinct? Are they warm or cold blooded? Did *Bron-tosaurus* lose its head? Learn some new thoughts about these prehistoric creatures as you venture back in time in the Halls of Early and Late Dinosaurs.

Ocean Life: This tour will focus upon whales, dolphins, polar bears, manatees, walruses, and seals, and discuss the remarkable ways they have

adapted to their aquatic environment.

Minerals and Gems: A celestial gemstone; the world's largest topaz crystal, the Star of India, and minerals useful in daily life will all be included in this tour of one of the Museum's most popular halls.

Northwest Coast Indians: This tour will look at the beautiful objects of the Northwest Coast ranging from brightly colored masks to magnificent totem poles as well as the animals and rain forests that are such an integral part of Northwest Coast cultures.

These tours are open only to Participating, Donor, and Elected Members of the Museum. To join, please fill out the adjacent coupon.

Please sign up for no more than two tours and please indicate a first and second choice of times for each tour.

Minerals and Gems

— Wed. Mar. 4 at 6:30 p.m. — Sun. Apr. 5 at 11:00 a.m.
— Sat. Mar. 7 at 11:00 a.m. — Wed. Apr. 15 at 6:30 p.m.

Dinosaurs

— Wed. Mar. 11 at 6:30 p.m. — Wed. Mar. 25 at 6:30 a.m.
— Sun. Mar. 15 at 11:00 a.m. — Sun. Apr. 26 at 11:00 a.m.

Ocean Life

— Sun. Mar. 29 at 11:00 a.m. — Sat. Apr. 25 at 11:00 a.m.
— Wed. Apr. 29 at 6:30 p.m.

Northwest Coast Indians

— Sun. Mar. 22 at 11:00 a.m. — Sat. Apr. 11 at 6:30 p.m.

Number of people _____

Name _____

Address _____

City _____ State _____ Zip: _____

Daytime phone: _____

Please mail with a self-addressed, stamped envelope to Members' Tours, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

AMNH



Large copper crystals from the Hall of Minerals and Gems. See this hall and others on the Membership Highlight Tours.

Spring Lecture Series

The Department of Education's spring program of *Afternoon and Evening Lecture Series* is scheduled to begin the last week in February. Many subjects will be offered, ranging from Andean Birds to Hopi Indian Culture to performances by Asian puppeteers, and Members are entitled to a discount on most series tickets. All of the listings were in the January issue of *Rotunda*, and some are relisted here. Please call 873-7507 for more information and ticket availability.

Studying Birds. Four ornithologists will give slide-illustrated lectures on Eastern

and Western Meadowlarks, High Andean Birds, Birds of the Amazon, and the World's Endangered Cranes.

Symbol and Shadow: Puppets from the Asian Collections. Bette Erda, curator of the exhibit *Puppets: Dance and Drama of the Orient* will introduce five evenings of guest speakers on Asian puppets, and performances by Asian puppeteers.

Anthropology through Film. Dr. Malcolm Arth, Curator and Chairman of the Department of Education, will introduce and discuss six evenings of worldwide culture as captured

on film.

The Hopi. Seymour Koenig, Adjunct Professor of Art History and Archaeology at Columbia University, and Harriet Koenig, anthropologist and guest lecturer on the Hopi Snake dances, will give a series of slide-illustrated presentations to augment the special exhibition, *Hopi Kachinas, Spirit of Life*.

For more information about the *Afternoon and Evening Lecture Series*, or for course brochures with a pre-registration form, please call the Department of Education at 873-7507.

Sacred Visions

The Society for the Study of Myth and Tradition, publishers of *Parabola* magazine, will present a two part lecture on Wednesday, February 11 at 7:00 p.m., in the Auditorium. **Sacred Geography: An Inner Vision of Ecology** will explore the sacred values of Native American people, and the relationships of these higher values — gods, spirits, and other supernatural phenomena — to lower values of man and the earth. Particular focus will be paid to the significance of geographic areas.

Thomas Buckley, from the anthropology department at the University of Massachusetts,

Boston, will present a slide-illustrated lecture on the Yurok Indians of northwestern California. He will discuss the symbolic means by which they have traditionally experienced and expressed, in spiritual terms, the unity of humans, their immediate environment, and the cosmos. Arthur D. Amiotte, artist, teacher, and a member of the Oglala Sioux Teton Tribe, will talk of his experiences with the Sioux and other Native Americans of the plains, with respect to traditions in sacred geography.

The program, part of the Society's *Earth-Spirit* series, is free to all Museum visitors.

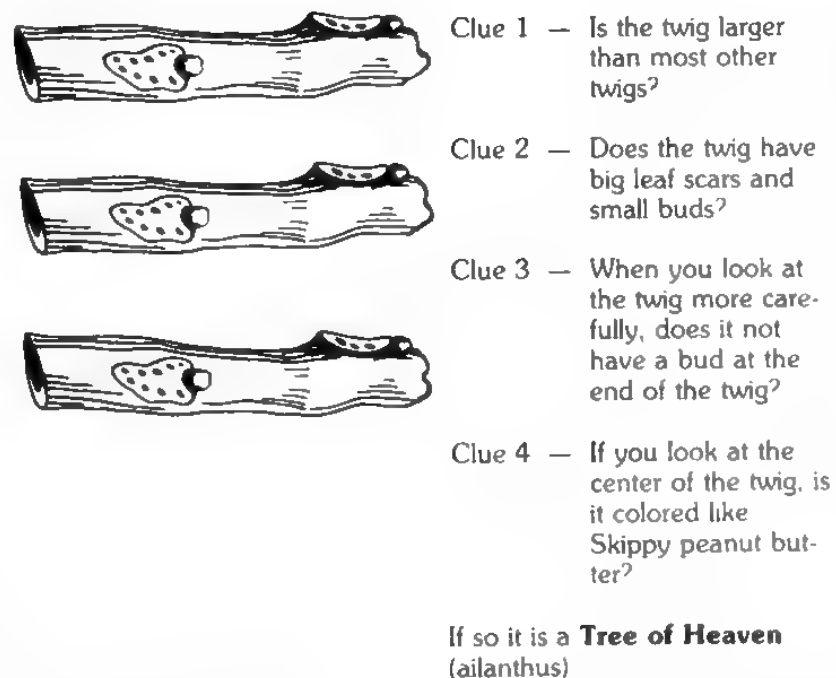
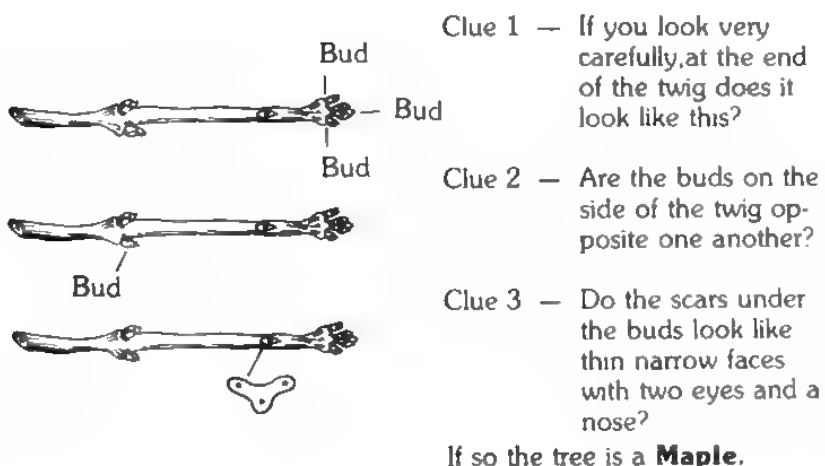
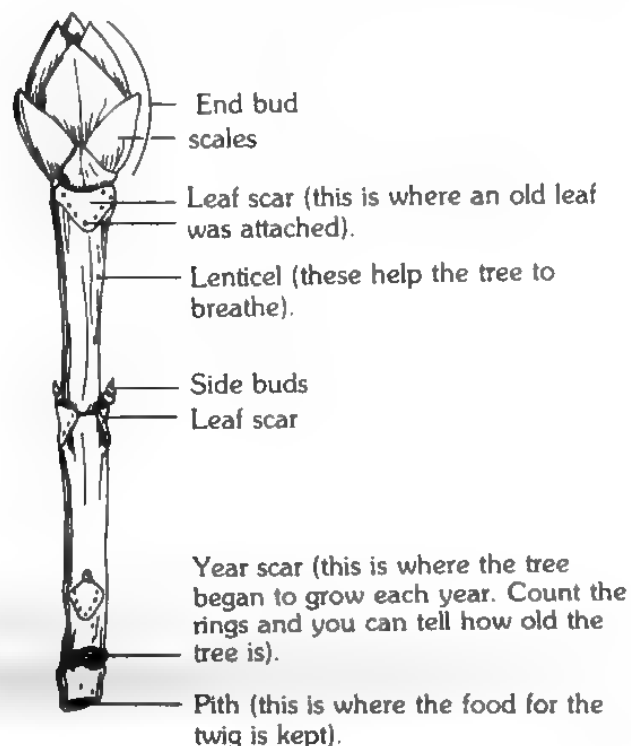
Identification Day

Saturday March 7 is Identification Day. Experts from the Museum's scientific departments will be in the Education Hall from 1:30 p.m. to 4:30 p.m. to identify any objects that you have collected from the worlds of anthropology and natural history. So if you have a shell, fossil, rock, feather, insect, bone, or arrowhead that you want to find out about, bring it to Identification Day.

Tales Twigs Tell

While no one has ever brought a twig to be identified at Identification Day, twig identification is a fun activity that you can do in a nearby park or perhaps even in your own back yard. Use the clues and pictures below to help you. Good luck.

This twig identification activity was developed by Robert J Finkelstein and is taken from his recent book, prepared with the Central Park Task Force, *The Central Park Workbook: Activities for an Urban Park*. Dr. Finkelstein is presently Curriculum Coordinator for the Academy of Environmental Sciences, a new public junior high school.



MUSEUM NOTES



New Exhibitions

Hopi Kachina: Spirit of Life. (Gallery 3, third floor.) A nationally touring exhibition about Hopi culture, particularly the role of the kachina, friendly spirit messengers to the deities. Opens February 9. See article page 2.

Glories of the Sea. (Roosevelt Rotunda, second floor.) A small exhibit of selections from the Munyan Collection of cone shells, recently donated to the Museum. See article page 4.

The Gardner D. Stout Hall of Asian Peoples. The Museum's newest permanent exhibition hall, containing over three thousand works of art and artifacts.

Profiles of the Past: The Geology of Three Southwest Canyons. (Gallery 77, first floor.) Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand, Bryce, and Zion canyons.

Programs and Tours

People Center. Black History Month. Weekends in February from 1:00-4:30 p.m. Special programs celebrating Black History. Refer to full page calendar for specific events. See article page 3.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours.

For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays. 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday 11:00 a.m. to 4:15 p.m. Wednesday evenings 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check rooms are located in the basement next to the cafeteria, and on the second floor of the Roosevelt Rotunda. There is a charge of 40¢ per coat.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852.

Southwestern Research Station, Portal, Arizona, 85632.

Priloris victorae, the Queen Victoria Rifle Bird, as illustrated by Joseph Wolf. An exhibit of Wolf's illustrations, both of the glorious Birds of Paradise and of many wild cats, will be on display in the Library Gallery beginning January 30, 1981.

Planetarium Events

The End of the World is the sky show at the Hayden Planetarium beginning January 7. Sometime in the future the world will end. How it will end — whether by the death of the sun, collision with an asteroid, the coming of a new ice-age, or nuclear Armageddon — is open to debate. *The End of the World* takes a dramatic look at the current theories. Sky show times: Weekdays, 1:30 and 3:30 p.m.

Weekends hourly, 1:00 through 5:00 p.m. Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828 or 873-8829.

Laserium and Cosmic Laser Concerts Under the Stars.

For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Stars of the Season. Wednesday, 7:30 p.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

The Art of Aldo Sessa. Surrealist paintings on display on the first floor of the Planetarium.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

February 1981

1 1:00-4:00 p.m. Black History Month. People Center. Music and Folk Traditions of East Africa – Bantu Music. African Toys and Games. African-American Folklore and Stories. For information call 873-1300, ext. 502, 576. Free

2

3

4 7:45 p.m. Amateur Astronomers Association. Education Hall.
New Moon (not visible)

5

6

7 1:00-4:30 p.m. Black History Month. People Center. Music & Folk Traditions of East Africa – Bantu Music. African Toys and Games. Montego Joe: African and Caribbean Dance Company. For information call 873-1300, ext. 502, 576. Free
11:00 a.m. The New York Map Society. Rm. 129.
2:00 p.m. New York Audubon Society Education Hall

8 1:00-4:30 p.m. Black History Month. People Center. African Toys and Games. Nubian Marriages: Past and Present. Montego Joe: African and Caribbean Dance Company. For information call 873-1300, ext. 502, 576. Free.

9 Opening of Hopi Kachina. Spirit of Life. Gallery 3 (See article page 2.)
7:30 p.m. Animal Behavior Society. Rm. 129.

10 8:00 p.m. Linnaean Society Education Hall

11 7:00 p.m. Sacred Geography: an Inner Vision of Ecology. Auditorium. (See article page 6.) Free.
7:30 p.m. New York Mineralogy Society. Calder Lab.
8:00 p.m. American Littoral Society. Fishes of New York, with C. Lavett Smith. Education Hall. Free.
First Quarter (half moon)

12 Stories of Diamonds exhibit opens in Education Gallery.

13

14 1:00-4:30 p.m. Black History Month. People Center. The Mask: Traditional and Contemporary. Patterns, Symbols, and Signs in African Art. Unsung Heroes. For information call 873-1300, ext. 502.

12:45 p.m. American Cetacean Society. Rm. 319
2:00 p.m. New York Shell Club. Rm. 426

15 1:00-4:30 p.m. Black History Month. People Center African-American Cuisine. Patterns, Symbols, and Signs. Unsung Heroes The Goodtime Duo (children's program). For information call 873-1300, ext. 502, 576. Free
2:00 p.m. New York Paleontological Society. Rm. 426
2:00 p.m. New York Turtle and Tortoise Society. Rm. 129

16 Washington's Birthday
1:00 and 3:00 p.m. Family Film Festival. Auditorium (See article page 4.) Free

17 8:00 p.m. New York Entomological Society. Rm. 129

18 Full Moon

19

20

21 1:00-4:30 p.m. Black History Month. People Center. African American Cuisine. "Dusky Sisters": Ancient Egyptian Queens Unsung Heroes. For information call 873-1300, ext. 502, 576. Free.

22 1:00-4:00 p.m. Black History Month. People Center The Mask: Traditional and Contemporary. "Dusky Sisters": Ancient Egyptian Queens. Unsung Heroes. For information call 873-1300, ext. 502, 576. Free
2:30 p.m. A Tribute to Paul Robeson. Auditorium. For information call 873-1300, ext. 502, 576. Free

23 First day for many of the Afternoon and Evening Lecture Series. For information call 873-7507

24 8:00 p.m. Linnaean Society. Education Hall

25 7:30 p.m. Visions at T-Minus Zero. Members' Program with John Teton. Auditorium. Free to Members. \$3.50 for non-members. (See article page 1.)
7:30 p.m. Lapidary and Gem Society. People Center

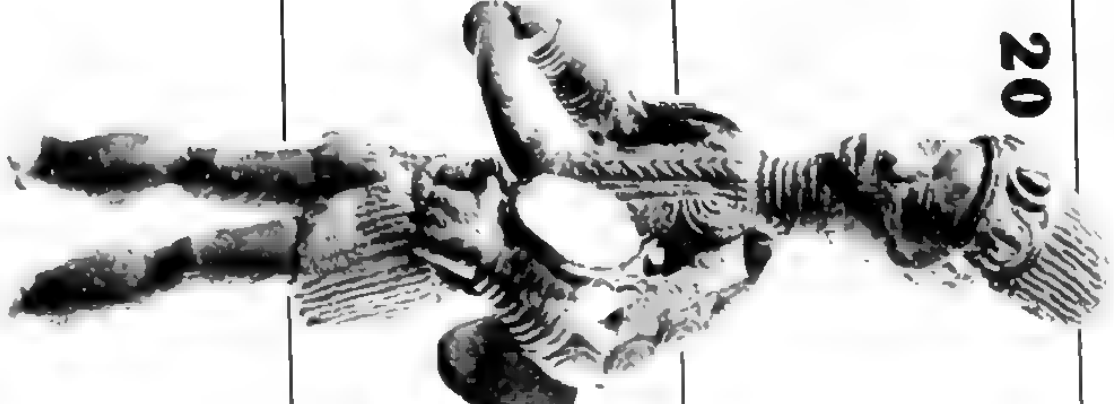
26 Last Quarter (half moon)



28 1:00-4:30 p.m. Black History Month. People Center Nubian Marriages: Past and Present Music and Folk Traditions of East Africa – Bantu Music. African-American Folklore and Stories. For information call 873-1300, ext. 502. First day of Workshops for Young People. For information call 873-7507

March 1981

1 2:00 p.m. Visions at T-Minus Zero. Family Members' Program with John Teton. Auditorium. Free to Members. \$3.50 for non-members. (See article page 1.)

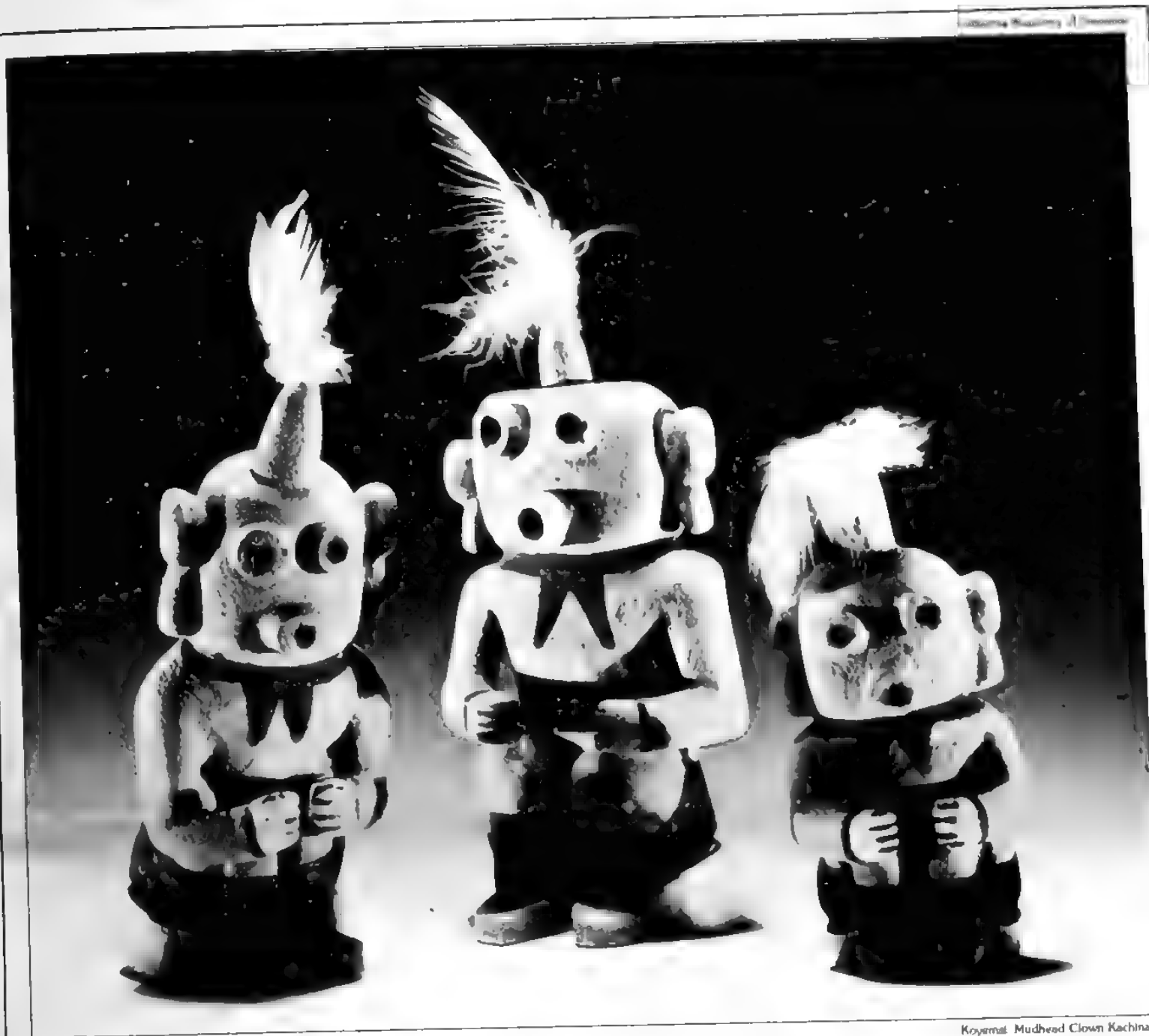


7 1:30-4:30 p.m. Identification Day. Education Hall. Free to Museum visitors. (See article page 7.)
1:00-4:00 p.m. Films of the Hopi Auditorium. Free to Museum visitors

American Museum of Natural History

ROOTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 5, No. 3 March 1981



Koyemal Mudhead Clown Kachinas

Hopi Celebration

The Hopi, America's oldest continuous culture, have survived in the arid climate of the Arizona mesas for more than 900 years. Their rich religious and symbolic heritage, both traditional and contemporary, is the focus of two exhibitions on display this spring. In addition, a special film series on the Hopi will be shown the weekend of March 7 and 8

Hopi Kachina: Spirit of Life Gallery 3 Through May 8

More than two hundred carved kachina figures, a full-sized kiva hatchway with sounds of a preparatory ritual emanating from below, slide presentations, and two rare kiva wall murals make up the nationally touring exhibition, organized by the California Academy of Sciences.

Kachinas are friendly spirit messengers who carry Hopi prayers to the deities, insuring rain, good weather, and bountiful harvests.

The focus of the exhibition is two scale-model village plazas, filled with carved kachina figures depicting the Powamu and the Niman ceremonials. The first, known as the February Bean Dance, celebrates the hope for successful crop germination. The second, a solemn one, gives thanks to the kachinas for their help.

A concluding audio-visual presentation offers candid interviews on the enduring aspects of the culture, with a few of the 6,000 Hopi presently living on the mesas.

Bird, Cloud, Snake: Hopi Symbols Akeley Gallery March 10 through May 15

Birds, clouds, and snakes are Hopi symbols of agricultural fertility, a great concern of these desert dwelling people. Traditionally, these symbols have been incorporated into the decorative patterns on day-to-day objects, both as a form of visual prayer, and as a reminder of the ongoing struggle with Nature

The exhibit will explore these symbols in both traditional and contemporary uses. Pottery, textiles, woodcarvings, an altar, and other traditional objects from the Museum's extensive Hopi collection will be displayed. Along side will be the paintings of several contemporary Hopi artists who have combined their symbolic heritage with the influence of the modern artistic movements. The work of Horst Antes, a German whose time spent with the Hopi led him to use this same symbolic heritage, will also be included.

The exhibit supplements the Hopi Kachina: Spirit of Life exhibition

Hopi Films Sat. and Sun., March 7 and 8 Auditorium 2:00 to 4:00 p.m.

On Saturday, March 7, there will be three short films, *The Snake Dance at Walpi* (1901), one of the first films ever made; *Hopi Indians of the Southwest* (1925), an anthropological documentary; and *Hopi Footrace*, shot by commercial filmmakers in the 1920's. In addition, an hour-long documentary entitled *Hopi* (1981) will be shown, depicting the strengths of the Hopi traditions today, despite the pressures to modernize. These films will be introduced by Elizabeth Weatherford, Director of Film Project at the Museum of the American Indian, Heye Foundation.

On Sunday, March 8, the 90-minute film, *The Shadow Catcher*, will be shown, which is a record of Edward S. Curtis' thirty years of filming the lives of Native Americans, including the Hopi. These segments were taken in the years 1896 to 1930, and were compiled in 1975

The films are free to all Museum visitors

Jane Goodall

Renowned scientist Jane Goodall is coming to the Museum to discuss her chimpanzee research in Tanzania.
Page 5

Space Nomads

A symposium on meteorites will be held in celebration of the new Arthur Ross Hall of Meteorites.
Page 2

Wandering Jews

A group of Jews, shipwrecked centuries ago off the coast of India, have managed to retain their heritage. They will be the subject of this month's Wednesday Evening Members' Program.
Page 3

Behind the Scenes

Join us for a Behind-the-Scenes Tour of the Departments of Exhibition and Ichthyology
Page 3

Feats with Feet

Several capoeiristas will leap and dance in mock combat, and William Moore will discuss the history of Capoeira, in a lecture-demonstration of the Afro-Brazilian martial art form
Page 5

The American Museum of Natural History presents

The Arthur Ross Meteorite Symposium

to celebrate the opening of the Arthur Ross Hall of Meteorites
Wednesday, April 29, 1981, from 1:30 to 9:30 p.m. in the Auditorium.
\$3.00 for Museum Members and Students. \$5.00 for non-members.

Some of the most distinguished scientists in the field of planetary studies will gather at the Museum to present their exciting research findings on meteorites and planetology. The program will include a preview of the Museum's new Arthur Ross Hall of Meteorites.

Afternoon Session: 1:30 p.m. to 5:15 p.m.

1:30 p.m. *Introductory Remarks.* Dr. Martin Prinz, Chairman of the Department of Mineral Sciences; Dr. Thomas D. Nicholson, Director of the American Museum of Natural History; and Arthur Ross, Museum Trustee.

1:45 p.m. *The Birth of Planetology.* Dr. John Wood of the Smithsonian Astrophysical Observatory and Harvard University surveys early ideas on meteorites, moons, and planets, and discusses how discoveries from the 1969 Apollo 11 Lunar Landing and subsequent missions have revolutionized our ideas about planets and the solar system.

2:20 p.m. *Meteorites as Rosetta Stones for Planetology.* Dr. Lawrence Grossman of the University of Chicago describes the different types of meteorites, including the remarkable Allende Meteorite, and the tales they tell about planetary history and processes.

3:15 p.m. *Meteorites Falling Everywhere.* New methods have enabled scientists to find meteorites in the upper atmosphere



and in Antarctica, and to sweep cosmic dust off the ocean floors. Dr. Donald Brownlee of the University of Washington and the California Institute of Technology will talk about how meteorites were found in the past, how they are found today, and the significance of his most recent discoveries.

3:50 p.m. *Where Do Meteorites Come From?* Dr. Clark R. Chapman of the Planetary Science Institute of the University of Arizona unravels the mysteries of the asteroid belt between Jupiter and Mars, and examines the dynamic processes that bring meteorites to Earth.

4:25 p.m. *The Sky is Falling.* Did a meteorite cause the extinction of the dinosaurs? Dr. Eugene Shoemaker of the U.S. Geological Survey, Arizona, explores this and other questions about what happens when meteorites hit the surface of the earth, moon and other planets.

Preview of the Arthur Ross Hall of Meteorites: 5:15

p.m. to 7:00 p.m. The new permanent home of the Museum's magnificent meteorite collection features the 34-ton "Ahnighito," the largest meteorite ever taken from the Earth's surface; moon rocks from NASA; and a series of exhibits illustrating the origins and significance of meteorites.

Evening Session: 7:00 p.m. to 9:30 p.m.

7:00 p.m. *Ancient Meteorites, Planetary Beginnings, and Pandora's Box.* 4½ billion years ago, it is believed a supernova exploded, creating our solar system. Dr. Gerald J. Wasserburg of the California Institute of Technology discusses this cataclysmic event as well as what happened to the solar system during its first 500 million years.

7:50 p.m. *A Grand Tour of the Planets.* Using striking photographs from Voyager and other NASA missions, Dr. Ronald Greeley of Arizona State University will take a look at our most current discoveries about Mercury, Venus, Earth, Mars, Jupiter and Saturn.

8:40 p.m. *Where Do We Go from Here?* Dr. Noel Hinners, Director of the Smithsonian's National Air and Space Museum, discusses the future of planetary science and space exploration.

9:30 p.m. *End of Symposium.*

All presentations will be followed by a brief question and answer period.

I would like to order tickets to the Arthur Ross Meteorite Symposium. Participating, Donor, and Elected Members may purchase up to six tickets at the Member's price of \$3.00. Associate Members and students may purchase one ticket. All other tickets are \$5.00.

Member and Student Tickets at \$3.00

Non-member tickets at \$5.00

Total Amount Enclosed

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: The Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York NY 10024

Name _____
Address _____
City _____ State _____ Zip _____
Daytime phone _____
Membership Category _____



Notice:

We regret to announce the cancellation of the Roosevelt Heirloom Celebration, mentioned in the February issue of *Rotunda*.

Finders Keepers

Identification Day
Saturday, March 7

Remember that stone you found and always wondered if it was valuable? It ended up on a shelf, dusty and neglected. And those arrowheads: are they authentic? Could some of those bones be fossils? What about the bug you took a picture of and always meant to look up? Rummage through your closet and dig them all out, because Saturday, March 7, is Identification Day at the Museum. From 1:30 to 4:30 p.m. scientists from several De-

partments will be available in the Education Hall to examine your treasures, answer your questions, and tell you what you have been keeping all this time. Every year something of value is uncovered. Maybe one is on your shelf.

The program is free to all Museum visitors.

Sidney Horenstein of the Department of Invertebrates examining specimens at last year's Identification Day.



Florence Stone

ROTUNDA

ISSN 0194-6110

Vol 5, No. 3
March 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Anne Naniaminsky — Designer
James Budenholzer — Copy Editor
Alan P. Temes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1981 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

Shanwar Telis: Shipwrecked Jews of India

Wednesday, March 18, 1981
7:30 p.m. Auditorium

In the Second Century B.C. a boatload of Judean Jews, fleeing the persecution of the Syrian Antiochus Epiphanes, was shipwrecked off the west coast of India. They settled in the Konkan region where they became oil pressers and were known as the "Shanwar Telis" (literally "Sabbath observing oil pressers"). Although they had lost all their books and soon forgot Hebrew, they continued to observe the Sabbath, Jewish Holidays and dietary law, and to practice circumcision. In the Eighteenth Century, they moved to Bombay and changed their name to "Bene Israel" ("Children of Israel").

Johanna Spector, Seminary Professor of Musicology at the Jewish Theological Seminary, will present her award winning film *The Shanwar Telis or Bene Israel* at our March Evening Members' Program. The film traces the history of this vanishing group and portrays their life in present day Bombay. The highlight of the film is a Bene

Israel wedding in which the preparations, the ceremony, and the reception are all captured in detail. Of particular interest is the *mendhi* rite, an elaborate ceremony of painting the bride. The film was a finalist at the American Film Festival and also a Ciné Award winner.

The program is free to all categories of membership. Your membership card is your ticket of admission. Non-members may purchase tickets for \$3.50 at the Auditorium door. Coffee and tea will be served before the program begins and Participating, Donor and Elected members may park free in the Museum Parking Lot, up to the capacity of the lot.

This program is presented in cooperation with the The Martin Steinberg Center of the American Jewish Congress — A Center for Jewish Artists.

Preparing for the Mendhi Ceremony before a wedding.



Johanna Spector

Behind the Scenes

Participating, Donor, and Elected Members of the Museum are invited to join a special Behind-the-Scenes Tour of the Department of Exhibition and the Department of Ichthyology
Saturday, April 4, 1981 Wednesday evening April 8, 1981

You will have the opportunity to visit areas the public never sees. Staff members from the Department of Ichthyology will be on hand to discuss their research and take you to the storage areas which house our collection of 400,000 fish. Preparators from the Department of Exhibition will lead you through their studios and illustrate the various techniques they use to imitate nature and to recreate the cultures of other peoples.

Light refreshments will be served at the conclusion of the tour, which lasts an hour and a half. Reservations at \$5.50 each can be made by completing and returning the adjacent coupon. Early reservations for the limited places are advised.



Tours will leave at fifteen minute intervals beginning at 10:30 a.m. on Saturday, April 4, and at 5:15 p.m. on Wednesday, April 8. We will send you a confirmation card by mail. Your card will indicate the exact time your tour will start.

Please indicate a first, second, and third choice (if possible)

- ___ Saturday, April 4, between 10:30 a.m. and 12:00 noon
- ___ Saturday, April 4, between 1:00 p.m. and 3:30 p.m.
- ___ Wednesday, April 8, between 5:15 p.m. and 6:00 p.m.
- ___ Wednesday, April 8, between 6:00 p.m. and 7:30 p.m.

Enclosed is my check for \$_____ to reserve _____ places at \$5.50 each for the Behind-the-Scenes Tour

Name _____
Address _____
City _____ State _____ Zip _____
Daytime Telephone _____
Membership category _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Behind-the-Scenes Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. After March 21, please call 873-1327 for reservation information.

Underwater Wonderland

A three-hour series of short underwater films, presented by the Department of Education, will be shown in the Auditorium, Saturday, March 21, from 1:00 to 4:00 p.m. Including both fresh and saltwater photography, the films will explore the lives and environments of a variety of undersea creatures. In order, they will be:

- 1:00 — *Sea Dream*, an underwater fantasy by Ellen Besen
- 1:10 — *Sea of Cortez*, John Knoop's examination of marine life on the coast of Baja California.
- 1:25 — *The Endless Sea*, a

descent into the deep by the National Film Board of Canada.

- 1:55 — *Otters, Clowns of the Sea*, Wah Chang and William F. Bryan's look at otters off the California coast

- 2:10 — *Night Life*, Robin Lehman's probing into the quiet, shadowy world of aquatic night.

- 2:20 — *Sea Turtles*, Time-Life's look at their struggle for survival, from their vulnerability on land to their relative safety in the water.

- 2:35 — *Sea Creatures*, an observation of sea life in the lower depths by Robin Lehman.
- 2:45 — *Still Waters*, Elgin

Ciampi's view of life in a country lake.

- 3:05 — *Undercurrents*, the ocean world's balance of nature by Robin Lehman.

- 3:15 — *The Octopus*, Time-Life's profile, taking the myth out of the monster.

- 3:25 — *The Other World*, Roman Bittman's portrayal of the delicate balance within a fresh water environment

- 3:45 — *H₂O* (silent), Ralph Steiner's study of the visual, abstract qualities of water.

The films will be shown in the Main Auditorium, and are free to all Museum visitors.

Poseidon's Perspective

On Saturday, March 28, both in the afternoon and evening, members, friends and guests of the American Littoral Society will wade and swim through a variety of topics in the 11th annual *Your Future in the Sea* symposium. Discussions will cover topics that range from whales to salt marshes, from turtles to deep sea exploration. Slide presentations will be given by Doug Falkner, whose underwater photography in *The Hidden Sea* and *The Living Reef* has been highly acclaimed, and by Richard Ellis,

author of *The Book of Whales*. Eugenie Clark will bring new photography and discuss her recent shark studies in Japan. In addition an underwater film by Robin Lehman will be shown, and much more.

Tickets are \$4.00 for the afternoon program (1:00-4:30 p.m.), \$5.00 for the evening program (8:00-10:30 p.m.), and \$8.00 for a combined ticket. To get these tickets, mail a check made out to the American Littoral Society, with a stamped, self-addressed envelope to: American Littoral

Society, Sandy Hook, Highlands, NJ 07732. Please do not mail your order to the Museum, as this will delay processing.

Ticket orders will be processed until March 20. After this tickets may be purchased at the Auditorium door on the day of the program while the supply lasts. Please mail your orders as soon as possible to avoid disappointment.

Part of the proceeds from the program will go to the Museum's Department of Ichthyology to support a student's interest in marine science.

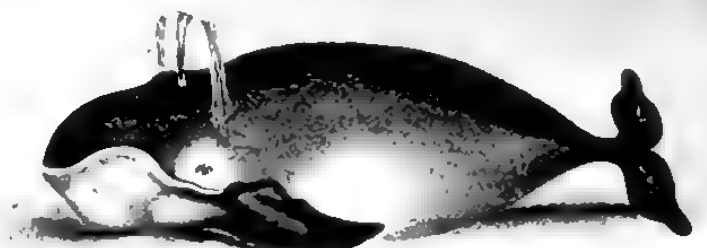
A Tale from Two Whales

Touch a whale's rib, listen to the sounds of the humpback whales, handle a narwhal's tusk, and see krill (the food of baleen whales) under a microscope, as Canada's Touring Museum for Children presents a participatory program about whales and whale biology. Designed especially for children ages three to seven years old, the program begins with the play *Tales from Two Whales*. In the play, which combines films, slides, costumed characters, and puppets, the audience joins Baby Humpback as she searches for her mother. As the search progresses, the audience learns that whales are mammals, witnesses the birth of a beluga whale, and helps Baby Humpback search for the krill she eats. The audience will also meet Mitch Narwhal and Beluga Bertha and join them as they assist Baby Humpback in escaping from the clutches of that notorious pirate and whale hunter, Colin Cutthroat.

At the end of the play, the children will be invited to investigate a number of participatory and touch exhibits and also to draw or cut out a whale of their own.

The program, produced by Johanne Benjamin and Silvija Ulmanis, has travelled to enthusiastic audiences throughout Canada. It is sponsored by The New Brunswick Museum and Canada's Museum Assistance Programmes.

(for children ages three to seven)
Saturday, March 21 and Sunday, March 22
11:00 a.m. and 2:30 p.m. Education Hall
Free for Members \$2.00 for non-members



Please register me for A Tale From Two Whales. Please indicate a first, second, and third choice of times. This program is designed for children ages three to seven years old

11 00 a.m. Saturday, March 21
2 30 p.m. Saturday, March 21
11:00 a.m. Sunday, March 22
2:30 p.m. Sunday, March 22

Number of children _____ (Children must be accompanied by an adult)
Number of adults _____

Participating, Donor and Elected Members are entitled to up to four free children's tickets and two free adult's tickets; Associate Members are entitled to one free child's ticket and one free adult ticket. All other tickets are \$2.00.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership Category: _____

Please mail with a self-addressed, stamped envelope to: A Tale From Two Whales, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

FILLED



The Chimpanzee

Portrait of the Best Known Ape with Jane Goodall

A Special Member's Program presented by the American Museum of Natural History
 Wednesday, May 13, 1981 at 7:30 p.m. in the Auditorium
 \$4.50 for Members \$7.50 for non-members

Members are invited to join Jane Goodall, the internationally celebrated scientist, as she presents an illustrated lecture on her pioneering research with the chimpanzees of the Gombe Stream Reserve in Tanzania. In her twenty years of research, Dr. Goodall has seen chimps born, grow to maturity, and then bear young of their own. She has been charmed by infant chimps and threatened by aggressive adolescents. And she has witnessed family squabbles and reconciliations, the rise of dominant males, and the splintering of a chimpanzee community.

Dr. Goodall is the author of numerous publications, including the highly popular book, *In the Shadow of Man*. Her Lecture Tour has been arranged through the L.S.B. Leakey Foundation, which also funds a portion of her research.

To order tickets, please use the adjacent coupon. Early reservations are strongly advised because of the limited number of tickets.

The Chimpanzee

I would like to order tickets for Jane Goodall's Lecture. Participating, Donor, and Elected Members may order up to four tickets at the special Members Price of \$4.50 per ticket. Associate Members may order one. The non-member's price is \$7.50 per ticket. Priority in purchasing tickets will be given to Members of the Museum until March 31, 1981.

Please make check payable to the American Museum of Natural History and mail with a self-addressed stamped envelope to: Jane Goodall Lecture, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Total Member's Tickets at \$4.50	\$ _____
Total Non-member Tickets at \$7.50	\$ _____
Total Payment enclosed	\$ _____
Name _____	
Address _____	
City _____	State _____ Zip _____
Daytime Telephone Number _____	
Membership Category _____	

On Sunday, March 15, at 2:00 p.m., the African-American program of the Department of Education will present a lecture-demonstration of *Capoeira*. This Afro-Brazilian martial art form is unique in that it trains advocates to fight equally as skillfully upside-down using their feet, as upright using their hands.

Capoeira was developed in Brazil during the colonial period when Portugal transported thousands of Africans into slavery. It developed among the slaves as a form of self-defense against their masters, and as a means of fending off bounty hunters after escapes. Because of this, both the practice and the teaching of *Capoeira* were outlawed by the Portuguese.

Instead of practicing it in secret, the art became disguised as a dance form and was performed to the accompaniment of drums and singing. As a result it could be performed openly, with the masters looking on, somewhat amused, at a "dance" done by slaves leaping about and kicking at each other.

William Moore, who has spent fifteen years studying Afro-Brazilian culture, much of it on *Capoeira*, will lecture on its history and introduce the demonstrations of several *capoeiristas*. These men, as children, learned the art from masters in their native state of Bahia, Brazil. They have performed internationally, and now teach the art to Americans here in New York City.

The program will be in the Auditorium and is free to all Museum visitors.



Dance of Defense

Sunday, March 15
 2:00 p.m. Auditorium



AMNH

Courses for Stargazers

Astronomy

Introduction to Astronomy Begins April 7, eight sessions, Tuesdays, 6:30-8:40 p.m. \$55 (\$49 for Members). Dr. Bartol

Stars, Constellations, and Legends Begins April 7, eight sessions, Tuesdays, 6:30-8:10 p.m. \$40 (\$36 for Members). Mr. Beyer

The Evolution of Modern Cosmology Begins April 9, eight sessions, Thursdays, 6:30-8:40 p.m. \$55 (\$49 for Members). Mr. Lesser

Astronomy Round Table. Begins April 6, eight sessions, Mondays, 6:30-8:40 p.m. \$55 (\$49 for Members). Dr. Franklin

Earth and Moon. Begins April 7, eight sessions, Tuesdays, 6:30-8:40 p.m. \$55 (\$49 for Members). Dr. Franklin

How to Use a Telescope. Begins April 8, eight sessions, Wednesdays, 6:30-8:40 p.m. \$55 (\$49 for Members). Mr. Storch

Astrophotography. Begins April 9, six sessions, Thursdays, 6:30-8:40 p.m. \$40 (\$36 for Members). Mr. Gordon

Aviation

Ground School for Private Pilots. Begins April 6, fourteen sessions, Mondays and Wednes-

days, 6:30-8:40 p.m. \$175 (\$157 for Members) Mr. Mayorga.

Navigation

Navigation in Coastal Waters Begins April 9, eight sessions, Thursdays, 6:30-9:00 p.m. \$90 (\$81 for Members). Dr. Hess

Introduction to Celestial Navigation. Begins April 7, eight sessions, Tuesdays, 6:30-9:00 p.m. \$90 (\$81 for Members). Mr. Parnham

Advanced Celestial Navigation. Begins April 6, eight sessions, Mondays, 6:30-9:00 p.m. \$90 (\$81 for Members). Mr. Parnham

For Young People

Astronomy Three. Begins April 11, five sessions, Saturdays, 11:00 a.m.-12:00 p.m. \$20 (\$18 for Members). Mr. Thomas

For More Information about Planetarium courses, write to the Hayden Planetarium, 81st Street and Central Park West, New York, NY 10024 or call (212) 873-1300 ext. 206 or 211

Above: Lunar eclipse over Manhattan.

MUSEUM NOTES

New Exhibitions

Hopi Kachina: Spirit of Life. (Gallery 3, third floor.) A nationally touring exhibition about Hopi culture, particularly the role of the kachina, friendly spirit messengers to the deities. Through May 8. (See article page 1.)

Bird, Cloud, Snake: Hopi Symbols. (Akeley Gallery, second floor.) March 10 through May 15. An overview of decorative symbols for agricultural fertility, and their use in modern Hopi art. (See article page 1.)

Gossamer Albatross. (Roosevelt Rotunda, second floor.) March 1 through May 30. An exhibit on the struggle to achieve human-powered flight, including the *Gossamer Albatross*, which flew across the English Channel in June of 1979. (See article page 7.)

Stories of Diamonds. (Education Gallery, first floor.) What diamonds are, and how they get from rough stones to the glorious shapes we recognize. Includes three hundred fancy, colored diamonds worth \$10 million. Through March 22.

Joseph Wolf: Natural History Artist. (Library Gallery, fourth floor.) Through May. An exhibit of natural history illustrations by Joseph Wolf, both of the Birds of Paradise and of many wild cats.

Glories of the Sea. (Roosevelt Rotunda, second floor.) Through March 12. A small exhibit of selections from the Museum's Munyan Collection of cone shells.

The Gardner D. Stout Hall of Asian Peoples. The Museum's newest permanent exhibition hall, containing over three thousand works of art and artifacts.

Profiles of the Past: The Geology of Three Great Canyons. (Gallery 77, first floor.) Through May 1. Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand, Bryce, and Zion canyons.

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented Saturdays and Sundays, from 1:00 to 4:30 p.m.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

The End of the World will be the sky show at the Hayden Planetarium through March 2, exploring the various ways, both astral and human-induced, that the world might end.

The Drama of the Universe will open March 5, presenting some of the most recent facts, theories, and astronomical discoveries to date. In addition, this series of short "acts" will explore astronomical phenomena such as the stars of the season, comets, and meteors.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.

Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828 or 873-8829.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

The Art of April Laughton. The representative works of an illustrator for *Science Digest*. On display on the first floor of the Planetarium, February 24 through April 28.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check rooms are located in the basement next to the cafeteria, and on the second floor of the Roosevelt Rotunda. There is a charge of 40¢ per item.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852.

Southwestern Research Station, Portal, Arizona, 85632.

April at the Museum



- | | |
|---------------------|---|
| Saturday, April 4 | Members' Behind-the-Scenes Tours. (See article page 3.) |
| Sunday, April 5 | Asian American Dance Theater. 2:00 p.m. Auditorium. Free. |
| Wednesday, April 8 | Members' Behind-the-Scenes Tours. (See article page 3.) |
| Sunday, April 12 | Birds of Prey. Family Members' Program with Bill Robinson. 1:00 p.m. (ages 3-7); 3:00 p.m. (all ages). Auditorium. Free to Members. \$3.00 for non-members. |
| Wednesday, April 15 | Alvin Ailey Dance. 7:30 p.m. |
| Tuesday, April 21 | Skins and Bones. Family Members' Program with Museum staff. 1:00 - 4:00 p.m. People Center. Free and open only to Members. |
| Wednesday, April 29 | Meteorite Symposium. (See article page 2.) |

I would like to register for the following Planetarium course(s).

Course	Price.*
Class beginning	
Name:	
Address	
City:	State:
Daytime phone:	Zip:

Mail this registration form and a check payable to the American Museum-Hayden Planetarium to: Course Registration, American Museum-Hayden Planetarium, 81st Street and Central Park West, New York NY 10024. Please note: in the event that a student withdraws from a course, a fee of \$10 and charges for sessions attended will be made on all refunds of tuition. No refunds can be made after the second session. Courses may be cancelled without prior notice, with full refund of tuition.

*Only Participating, Donor, and Elected Members may take the Members' discount

Bringing Back The Gorilla Group



The creation of the Hall of African Mammals was primarily the vision of one man — Carl Akeley. His dream was to blend accurate scientific knowledge with the artistry of his exhibition technique, and by doing so, to set a standard for future museum exhibition.

At that time, information about gorillas was filled with myths and inaccuracies. For this reason, the Gorilla Group was of particular interest to Akeley. He wanted to represent them as they were, and to do that, he needed to study them in the field. The story of his 1921 expedition to Africa to collect the gorillas, and of his attention to

detail in the mounting of them, was the subject of this column last month. His taxidermy method, which had revolutionized this art form, recreated every detail of the original animal in the form of a manikin. Then he fitted the tanned skin carefully over the manikin to achieve a lifelike quality for each animal.

Since the money was not available to build the African Hall, Akeley had to turn his attention to generating funds. He spent his free time lecturing and writing, in the hopes that someone might take an interest and finance the venture.

Finally, in 1925, Museum

Trustee Daniel E. Pomeroy told Akeley that George Eastman, the camera maker in Rochester, New York, was interested in going on an African Safari. Akeley told him bluntly, "If he's interested in the African Hall, then I am. If not, I'm not." Pomeroy and Akeley took the night train to Rochester to meet with Eastman. Although Akeley could not convince him to support the building of the entire hall, Eastman did promise to pay his own share of the expedition expenses, and to pay for the collection and installation of three groups as well: the water hole, the buffalo, and the klipspringer. The planned expedition came to be known as the Akeley, Eastman, Pomeroy expedition of 1926-1927.

A crew of Museum workers was selected to accompany them and accurately record the environments: Robert Rockwell, as taxidermist, with Richard Raddatz as his assistant; two painters of some repute, Arthur Jansson, and William Leigh; as well as Akeley's second wife, Mary Jobe Akeley. Their plan was to collect for the funded groups first, then spend any remaining time doing studies and collecting for the others, such as the gorilla group.

During the first eight months in Africa, with the aid of Eastman and Pomeroy, they successfully collected six groups.

Akeley, who was not well and had been forced to spend time recuperating in a Nairobi hospital, was anxious to get into the mountainous gorilla country. He rejoined the expedition to journey back to what he had called "the most beautiful place in Africa." The combination, however, of a grueling trip, high altitude and very unpleasant weather, weakened him further. Shortly after they arrived at the 11,000 foot high camp, in the

saddle between Mt. Mikenno and Mt. Karisimbi, Akeley's heart failed and he died. His stunned widow and crew buried him on a high slope of Mt. Mikenno.

Mary Akeley, who was determined to carry on his work, pressed on to finish the collecting they had started. Field conditions were at their worst. During the seven weeks in that camp they only saw the sun six times. With the aid of a photograph, they located the scene of the gorilla group that Akeley had chosen six years before. From that spot, the painter William Leigh began his studies of the scenery of rugged Mt. Mikenno and its glorious vegetation.

Mary Akeley coordinated the work on the foreground preparation. She had to master the panoramic and stereoscopic cameras that were so important in recording the details. From fifty plants they found growing at the spot, they chose to reproduce twenty-two of the most prominent. First she photographed them in detail, and then Leigh did color studies of them. Fine specimens of each plant were preserved in formalin, and finally two hundred plaster casts of the various leaves and stems were made. The rain and cold were so constant that the crew had to construct a bamboo hut and keep fires going inside to encourage the plaster to dry.

Six weeks of constant work were needed to make detailed studies and collections of the material for the foreground and background. And when they finally packed up to leave, sixty porters were required to carry their acquisitions.

It took the plant maker, Albert Butler, and a staff of six people, over a year to recreate the foreground of the Gorilla Group. And as they fashioned each plant, they experimented

with a variety of materials to create the most lifelike duplicate possible. For the wild celery plant, 50,000 leaves were made out of crepe paper, wire, and wax. The venation pattern of the leaves, taken from the actual plaster casts, was pressed on to the basic sizes of paper leaves. Fine wire was attached to the mid-rib of the leaf in order to attach it to the main stem. The paper leaf was then dipped in wax and assembled on the stem to be painted with an airbrush. Each of the twenty-two species of plant was created in its own painstakingly individual manner.

The collected vines reached the Museum compacted and dry. First they were relaxed in hot water, then transferred to a preserving solution which restored their flexibility. Air brushing recreated their original color as recorded in Leigh's studies.

One tree was brought back whole, while another was created by covering a wooden frame with wire mesh, burlap and papier-mâché.

Before either the animals or the foreground were installed, Leigh recreated the view. The impressive scene was painted on a curved panoramic background measuring eighteen feet by seventy feet. Finally the animals and plants were added, taking exceptional care to tie the background and foreground together so the whole exhibit would look convincingly real.

Nineteen other exhibits were prepared in similar ways, all based on the detailed notes and plans that Carl Akeley left. On January 19, 1936, the anniversary of his birthday, the Hall opened and was dedicated the Akeley Memorial Hall of African Mammals.

— Kate Bennett-Mendez

Mythical Musings

Sunday, March 22

Many people have experienced lengthy visions of events in another world, while "real time" has elapsed only moments. Usually, these visions are regarded as purely imaginary in terms of their scientific credibility, regardless of any "greater reality" in the life and psyche of the person who experiences them. Some Indian texts, however, tell of men who set out to prove to other observers — in terms of time, space, and physical data — the true reality of what they had dreamed.

On Sunday, March 22, at 2:00 p.m. in the Auditorium, Dr. Wendy Doniger O'Flaherty, Professor of History of Religions at the University of Chicago, will give a lecture entitled: *How to Prove that a Mythical Experience is Real*. Based on ideas from her article "Inside and Outside the Mouth of God: the Boundary between Myth and Reality," she will explore the ways these mystics went about proving their experiences.

The program, sponsored by the Department of Education, is free to all Museum visitors.

Wings of Man



The Gossamer Albatross crossing the English Channel

A dream that had roots going back to Leonardo daVinci was fulfilled on June 12, 1979: a man flew across the English Channel entirely under his own power.

Beginning March 1 and running through May, the machine he flew, the Gossamer Albatross, will be on display on the second floor of the Roosevelt

Rotunda. Weighing only seventy pounds, with a wingspan of ninety-six feet, the craft, designed by Paul MacCready, is made from ultra-light fabrics provided by Dupont. Bryan Allen, a 27 year-old bicycle racer and hang glider pilot, muscled the leg-powered airplane from England to France in just under three hours.

The Gossamer Albatross was the second MacCready-Allen success. The first was with the Gossamer Condor, when MacCready's design, under Allen's leg-power, travelled a figure-eight course of 1.15 miles in about seven minutes. Until that flight no human-powered craft had successfully combined the ability to maneuver with the

ability to sustain flight.

The Gossamer Albatross, whose longest previous flight was a thirteen mile venture over the Mojave Desert, won the Kremer Prize of \$200,000 for its twenty-three mile crossing. It will be on display as the culmination of an exhibit on efforts to achieve human-powered flight.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

March 1981

1 2:00 p.m. Visions at 17-Minus Zero. Family Member's Program with John Teton. Auditorium. Free to Members.

Gossamer Albatross opens on the second floor of the Roosevelt Rotunda. Free. (See article page 7.)

2 7:30 p.m. American Littoral Society. "Sex in the Water!" The use of tropical fish in Biomedical research. Rm. 426. Free.

3

4 2:00 p.m. Introduction to the Gardner D. Stout Hall of Asian Peoples. Gallery talk with S. Gronewold. Assemble at first floor Information Desk. Free.

5 2:00 p.m. Marine Plants and the Web of Life. Gallery talk with H. Schiller. Assemble at first floor Information Desk. Free.

6 New Moon (not visible)

7 1:30-4:30 p.m. Identification Day. Education Hall. Free. (See article page 2.)

2:00-4:00 p.m. Films on the Hopi Indians. Auditorium. Free. (See article page 1.)

11:00 a.m. New York Map Society. Rm. 129. Free.

8 2:00-4:00 p.m. Films on the Hopi Indians. Auditorium. Free. (See article page 1.)

12:45 p.m. American Cetacean Society. Rm. 319. Free.

2:00 p.m. New York Shell Club. Rm. 426. Free.

9 7:30 p.m. Animal Behavior Society. Rm. 129. Free

10 Bird, Cloud, Snake: Hopi Symbols opens in the Akeley Gallery. Free. (See article page 1.)

11 2:00 p.m. Women in East Asia. Gallery Talk with S. Gronewold. Assemble at first floor Information Desk. Free.

12 2:00 p.m. Desert East. Gallery Talk with P. Saffron. Assemble at first floor Information Desk. Free.

13

14

15 2:00 p.m. Capoeira Martial Arts Demonstration and Lecture. Auditorium. Free. (See article page 5.)

2:00 p.m. New York Paleontological Society. Rm. 426. Free

2:00 p.m. New York Turtle and Tortoise Society. Rm. 129. Free

16

17 8:00 p.m. New York Entomological Society. Rm. 129. Free.

18 7:30 p.m. Shanwar Telle: Shipwrecked Jews of India, with Johanna Spector. Auditorium. Free to Members. \$3.50 for non-members. (See article page 3.)

19 2:00 p.m. Meat-eating Animals. Gallery Talk with R. Aylward. Assemble at first floor Information Desk. Free.

20 Full Moon
Vernal Equinox: Spring Begins at 12:03 p.m. E.S.T.

21 11:00 a.m. and 2:30 p.m. A Tale from Two Whales. Family Members' Program. Education Hall. Free for Members. \$2.00 for non-members. Reservations required. (See article page 4.)

1:00-4:00 p.m. Underwater Nature Films. Auditorium. Free. (See article page 4.)

22 11:00 a.m. and 2:30 p.m. A Tale from Two Whales. Family Members' Program. See March 21.

2:00 p.m. How to Prove a Mythical Experience is Real. Auditorium. Free. (See article page 7.)

23 6:30 p.m. James Arthur Lecture on the Evolution of the Human Brain "The Evolution of the Primate Neocortex," with Dr. Irving T. Diamond. Auditorium. Free

24 8:00 p.m. Linnean Society. People Center

25 2:00 p.m. Women in Traditional Central Asia and Tibet. Gallery Talk with S. Gronewold. Assemble at first floor Information Desk. Free.

26 2:00 p.m. The Beginnings of Civilization. Gallery Talk with N. Johnson. Assemble at first floor Information Desk. Free

27

28 1:00 p.m. Your Future in the Sea. Littoral Society Symposium. Tickets required. (See article page 4.)

Last Quarter (half moon)

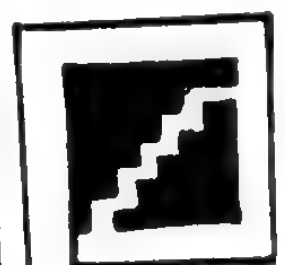
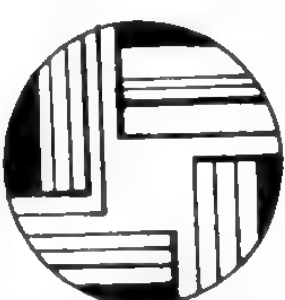
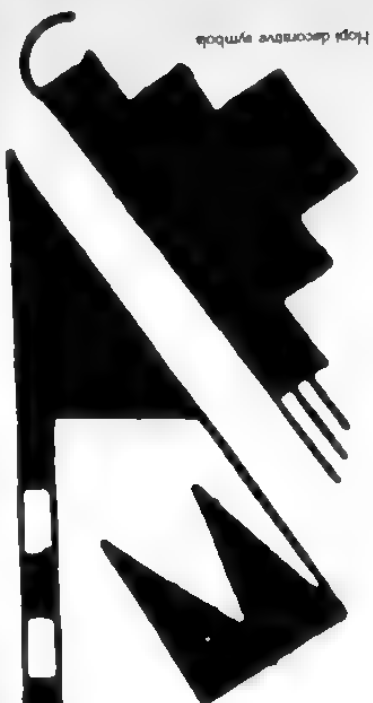
29

30

31

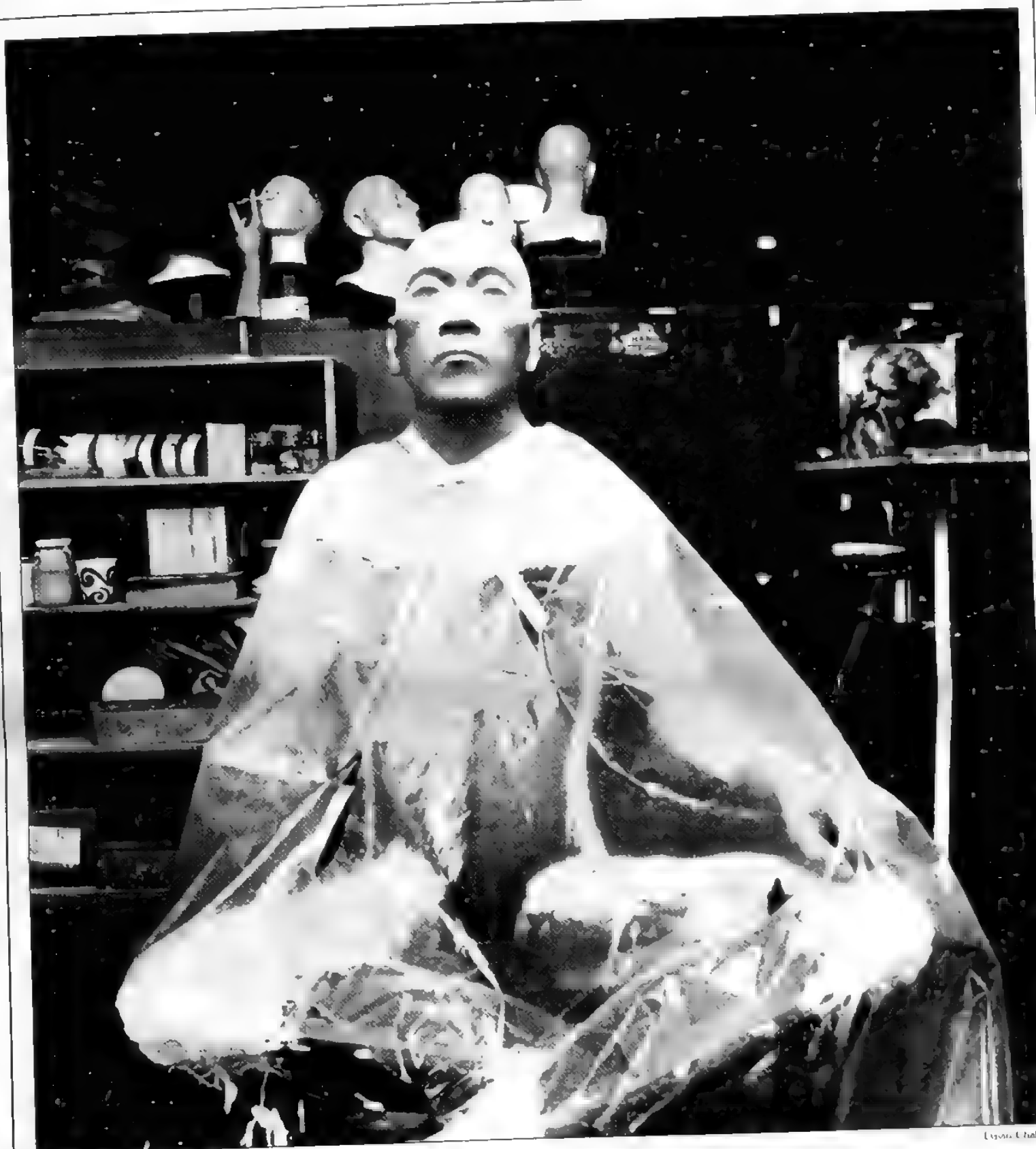
American Museum of Natural History

Hopi decorative symbols



ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 5, No 4 April 1981



Secret Places, Hidden Treasures

People often think of the Museum only in terms of its exhibitions and programs. But behind these there is a world of 34 million objects housed in storage areas; of scientists engaged in research; of conservators preserving the collections for posterity; and of artists preparing new exhibits for the future. It is a world that the public never sees, but one which Members can explore in our unique Behind-the-Scenes Tours. This spring we will conduct tours of the Departments of Exhibition and Ichthyology.

Preparators from the Department of Exhibition will take you through their studio to show you the techniques they use to recreate the habitats and haunts of peoples, plants, and animals from every corner of the world. You will find out about the Akeley tech-

nique for exhibiting mammals; see a leaf making machine in operation; and view the models, molds, and casts used in the creation of the Hall of Asian Peoples, as well as other recent exhibitions.

Members will visit the Department of Ichthyology's storage areas to see a sampling from their collection of more than 400,000 fish. You will see shark skulls, exotic species, beautifully dyed specimens, and one of the Museum's most remarkable treasures: a primitive female coelacanth and her embryos. Scientists from the department will be on hand to explain how fish are collected, preserved and used in scientific research.

There will be a coffee, tea and punch reception for all participants at

Members are invited to learn about the techniques of creating our unique exhibitions at the Behind-the-Scenes Tours this month.

the end of each tour. Tours last about an hour and a half.

Dates: Saturday, April 4
Wednesday evening, April 8

Price: \$5.50

The tours are open only to Participating, Donor, and Elected Members of the Museum. The tours were originally advertised in the March issue of *Rotunda* and only a limited number of places are still available. To reserve a space, please call (212) 873-1327.

Iron from the Sky

At a major symposium marking the opening of the new Arthur Ross Hall of Meteorites, experts will discuss meteorites' significance in laymen's language.

Page 5

Also in this issue, information in the Members' Memo about the Members reception for the new Hall; and an unusual *Letter from the Field*, written by Robert E. Peary in 1896 on his struggle to excavate the 31-ton "Ahnighito" meteorite, now in the hall.

Pages 2 and 4

High Flying Hunters

Bill Robinson will bring two hawks, an eagle and an owl to the Museum for this month's Family Members' Program. Don't miss these close-up demonstrations, including how birds fly.

Page 3

Black Market Treasures

The plundering of archeological sites in the Middle East and Italy, and the ethical problems raised in acquiring these finds, will be the subject of a special film series, *Visions of Antiquity: Licit and Illicit*.

Page 3

Fossils of Fifth Avenue

Sidney Horenstein will give his famous tour of the fossils of Fifth Avenue, plus a new nature walk of Inwood Park this month.

Page 7

Alvin Ailey

Wednesday, April 15

Auditorium, 7:30 p.m.

For the seventh consecutive year the Department of Education is presenting the Alvin Ailey Repertory Ensemble in a program of dance and creative movement.

The Ensemble was founded in 1974 under the artistic direction of Sylvia Waters, a former Ailey dancer. They not only study and perform works from

the standard Ailey repertoire, but present original works by students and other choreographers as well. The Repertory Ensemble has gained wide recognition as a vehicle for the creative expressions and development of young artists, both in movement and in design.

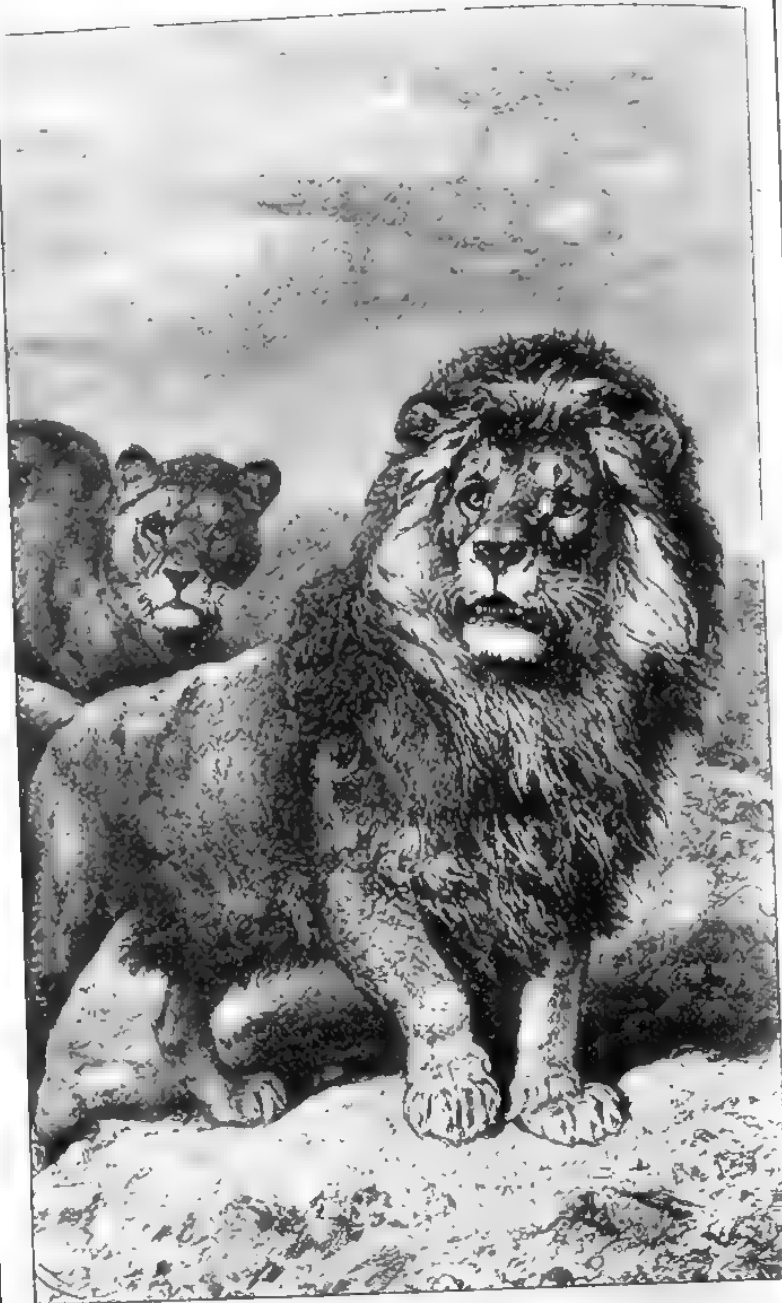
Tickets for the performance

are free, but will be available only on the day of the performance at the first floor information desk. They will be distributed on a first-come, first-served basis beginning at 5:15 p.m. Only ticket holders will be admitted to the performance, so we suggest Members come early to avoid disappointment.



Bili Burd

Skins and Bones



On Tuesday, April 21, Members are invited to attend a program entitled *Skins and Bones* in the Museum's People Center. The program will focus on North American and African animals, and the important roles they play in diverse human cultures.

Ismael Calderon of the Museum's Department of Education will use skins, bones, skulls, tusks, and mounted specimens to explain the biology and habits of bears, beavers, deer, elephants, lions, and other animals. Nat Johnson, another member of the Department, will present an array of objects from the collection, ranging from an Iroquois rattle shaped from a turtle shell, to an East African whisk broom fashioned from an elephant's

Peter Chermayeff's film *Lion* is one of a series of nature films that will complement the *Skins and Bones* program on Tuesday, April 21 in the People Center.

tail. These will illustrate how animals are used by different Native American and African cultures. The two presentations will be complemented by a series of short nature films.

The program will be held from 1:00 to 4:30 p.m., and Members are welcome to drop by any time between those hours. The program is free and open only to Members of the Museum.

Members' Memo

This spring, Members are invited to receptions to honor two openings — the new Arthur Ross Hall of Meteorites, and a special summer exhibition, *Shakespeare: The Globe and the World*.

The reception for the Hall of Meteorites will be on Tuesday evening, May 19. There will be a private viewing of the Hall, which features a wide variety of meteorites and moon rocks, and includes exhibits and audio-visual presentations which explain the origins of meteorites. The visual focus of the Hall is the 31-ton "Ahnighito," the largest meteorite "in captivity" in the world.

A special Auditorium program with refreshments is

planned for the evening. The program will feature films from NASA with footage of the Apollo Lunar Missions and simulations of meteorite bombardments. In addition there will be a short slide presentation on the dramatic story of transporting "Ahnighito" from frozen Greenland to the Museum.

Martin Prinz, curator of the Hall, will be on hand to answer any questions you might have about meteorites or planetology.

The May issue of *Rotunda* will provide you with more details about the reception.

Shakespeare: The Globe and the World is a special exhibition from the Folger Shakespeare Library in Washington DC.

Featuring the finest items from their world famous Shakespeareana collection, this multi-media exhibition is on a 24-month cross-country tour and will open Thursday, June 18, in Gallery 3. That evening, Members are invited to a private reception to view the Hall, and afterwards to honor the bard and celebrate the summer solstice under the whale.

Save the dates for both receptions on your calendar. Details will follow in the next issue.

Kate Bennett-Mendez

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 4
April 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
James Budenholzer — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1981 American Museum of Natural History. Second-class postage paid at New York, N.Y.

An Evening with Jane Goodall

Wednesday, May 13 — sold out
Additional lecture — Tuesday, May 12

On Wednesday, May 13, at 7:30 p.m., the celebrated scientist Dr. Jane Goodall will present a film-illustrated lecture entitled *The Chimpanzee: Portrait of the Best Known Ape*. Focusing on her ongoing research in the Gombe Stream Reserve in Tanzania, Dr. Goodall will discuss the chimpanzee communities she has studied for the last twenty-one years.

More than two decades ago, anthropologist Louis Leakey encouraged her to do research on chimpanzees, and helped her obtain a small grant to fund her first work. With a minimum of equipment, she trekked to the remote eastern shore of Lake Tanganyika, in what is now Tanzania. There she began to study a community of forty-five chimpanzees in their natural habitat

Since then she has been charmed by infant chimps who touch her and sniff her fingers to see what she is; attacked by adolescent males, who pound on her and pull her hair as part of their frustrating struggle to dominate females. She has seen the delight chimp mothers experience while playing with their children, and then seen those children grow to maturity and bear young of their own. She has witnessed family squabbles and reconciliations, wars between different groups, and times of peace.

While Dr. Goodall acknowledges similarities in their behavior to that of humans, she hesitates to draw parallels. She claims that there are inherent differences between the two intellectual capabilities

"What a fantastic intellectual

leap we've made, what a fantastic brain we have developed! You can't imagine a chimpanzee Mozart. You can't imagine a chimpanzee building Notre Dame. And you can't imagine a chimpanzee wrestling with his conscience."

There are times though, she admits, when the similarities are remarkable and the comparisons are unavoidable. At times like this she can only shake her head and chuckle.

"They do set us to thinking about the way we act, don't they?"

The lecture, in the Museum's Auditorium, will be \$4.50 for Members, \$7.50 for non-members. Due to the limited number of seats available, Members should make their reservations as early as possible

Due to popular demand, Jane Goodall has agreed to present a second lecture on Tuesday, May 12 at 8:00 p.m. in the Auditorium. Please use this coupon to order tickets. (Tickets previously ordered for the May 13 Lecture will be mailed by April 3).

Participating, Donor, and Elected Members may purchase up to four tickets at the Members' price. Associate Members may purchase one.

Members' tickets at \$4.50 each.	\$
Non-members' tickets at \$7.50 each	\$
Total payment enclosed	\$

Name

Address

City

State

Zip

Daytime phone:

Membership Category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Jane Goodall Lecture, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Visions of Antiquity

Mondays, May 4, 11, 18 Auditorium, 7:00 p.m.

Visions of Antiquity: Licit and Illicit, will be presented three Mondays in May by the New York Society of the Archeological Institute of America. On all three evenings full-length color films will be shown at 7:00 p.m. in the Auditorium, followed by informal discussions with invited guests. The three films will be:

Monday, May 4. *The Plunderers (Part I): Treasure Trail*. The American premiere of a BBC/Time-Life documentary investigating illegal digging in Turkey. Impoverished farmers sell their finds to dealers, who in turn make enormous profits through resale to

museums and private collectors.

Monday, May 11. *The Plunderers (Part II): Hot Pot*. An investigation into the Euphronios Vase, bought by the Metropolitan Museum of Art for more than a million dollars. It also documents the destruction in the Etruscan tombs and the devastation of the Egyptian temples and graves, many of which lie in the Valley of Kings and Nobles in Luxor.

Monday, May 18. *The Royal Archives of Ebla*. An overview of the recent scientific excavations in Syria that have unearthed more than 17,000 clay tablets. The film explores the

Biblical-sounding names in the texts that have aroused not only great interest but controversy as well.

Tickets for the series will cost \$18.00 (\$12.00 for Members). Please note that no single evening tickets will be sold. To order tickets use the adjacent coupon. Make checks payable to *Visions of Antiquity* and mail with a self-addressed, stamped envelope to the Archeological Institute of America, 53 Park Place, New York, NY, 10038

Please do not send orders to the Museum as this will delay processing.

I would like to order tickets to *Visions of Antiquity*. Participating, Donor, and Elected Members may purchase up to six tickets at the Member's price of \$12.00. Associate Members may purchase one. All other tickets are \$18.00

Number of Member's tickets at \$12.00:
Number of non-member's tickets at \$18.00:
Total amount enclosed:

Name

Address

City

State

Zip

Daytime phone:

Membership category:

Please make check payable to *Visions of Antiquity* and mail with a self-addressed, stamped envelope to: Archeological Institute of America, 53 Park Place, New York, NY, 10038

Birds of Prey



Sunday, April 12, Auditorium
1:00 p.m. for children under seven
3:00 p.m. for all ages

At a rather sedate dinner in the Hall of Ocean Life to honor Charles Lindberg, a guest speaker stood at the podium and said, "This is an example of true flight." He raised his arm and from somewhere in the balcony an enormous Harris hawk swooped down under the Blue whale, over the heads of the startled guests, and alighted on his arm.

The hawk that came to dinner, as well as an African Tawny eagle, a Red-Tailed hawk, and a European eagle owl, will all come to the Museum with Bill Robinson, their keeper and trainer, for this month's Family Members' Program. One program at 1:00 p.m. will be specially tailored to

an audience of children under seven, and the other, at 3:00 p.m., will be for all ages.

The presentations will include live demonstrations of how a bird flies, and will also cover their unique physical features — their talons, their remarkable eyesight, and their beaks. Incorporated into the discussion will be slides and a brief film.

Bill Robinson has been presenting this program to audiences of all ages since 1968.

"Many of our native hawks and owls have been drastically reduced in numbers," he says, "due to man's misunderstanding of their importance in the environment."

By presenting them as the fascinating animals that they really are, and by creating a public awareness of their usefulness, he hopes to fend off the threat of their extinction.

The program is free to all categories of Membership. Your Membership card is your ticket of admission. Non-members may purchase tickets for \$3.00 at the Auditorium Door.

A Tawny eagle flying on to the outstretched glove of its trainer, Bill Robinson. Robinson will bring four live birds to his Members' Program this month

The American Museum of Natural History
presents

The Arthur Ross Meteorite Symposium

with a special preview of the
Arthur Ross Hall of Meteorites

Wednesday, April 29, 1981

Afternoon Session 1:30 to 5:15 p.m. Evening Session 7:00 to 9:30 p.m.
in the Auditorium

\$3.00 for Museum Members and Students
\$5.00 for non-members.



Some of the most distinguished scientists in the field of planetary studies will gather at the Museum to present their exciting research findings on meteorites and planetology. The program will include a preview of the Museum's new Arthur Ross Hall of Meteorites

Afternoon Session

1:30 p.m. **Introductory**

Remarks. Dr. Martin Pniz, Chairman of the Department of Mineral Sciences; Dr. Thomas D. Nicholson, Director of the American Museum of Natural History, and Arthur Ross, Museum Trustee

1:45 p.m. **The Birth of**

Planetology. Dr. John Wood of the Smithsonian Astrophysical Observatory and Harvard University surveys early ideas on meteorites, moons, and planets, and discusses how discoveries from the 1969 Apollo 11 Lunar Landing and subsequent missions have revolutionized our ideas about planets and the solar system

2:20 p.m. **Meteorites as**

Rosetta Stones for Planetology. Dr. Lawrence Grossman of the University of Chicago describes the different types of meteorites, including

the remarkable Allende Meteorite, and the tales they tell about planetary history and processes

3:15 p.m. **Meteorites**
Falling Everywhere. New

methods have enabled scientists to find meteorites in the upper atmosphere and in Antarctica, and to sweep cosmic dust off the ocean floors. Dr. Donald Brownlee of the University of Washington and the California Institute of Technology will talk about how meteorites were found in the past, how they are found today, and the significance of his most recent discoveries.

3:50 p.m. **Where Do**
Meteorites Come From?

Dr. Clark R. Chapman of the Planetary Science Institute of the University of Arizona unravels the mysteries of the asteroid belt between Jupiter and Mars, and examines the dynamic processes that bring meteorites to Earth

4:25 p.m. **The Sky Is Fall-**

ing. Did a meteorite cause the extinction of the dinosaurs? Dr. Eugene Shoemaker of the U.S. Geological Survey, Arizona, explores this and other questions about what happens when meteorites hit the surface of the earth, moon and other planets.

Preview of the Arthur Ross Hall of Meteorites

5:15 p.m. to 7:00 p.m.

The new permanent home of the Museum's magnificent meteorite collection features the 31-ton "Ahnighito," the largest meteorite ever taken from the Earth's surface, moon rocks from NASA; and a series of exhibits illustrating the origins and significance of meteorites

Evening Session

7:00 p.m. **Ancient**

Meteorites, Planetary Be-
ginnings, and Pandora's

Box. 4½ billion years ago, it is believed a supernova exploded, creating our solar system. Dr. Gerald J. Wasserburg of the California Institute of Technology discusses this cataclysmic event as well as what happened to the solar system during its first 500 million years.

7:50 p.m. **A Grand Tour**

of the Planets. Using striking photographs from Voyager and other NASA missions, Dr. Ronald Greeley of Arizona State University will take a look at our most current discoveries about Mercury, Venus, Earth, Mars, Jupiter and Saturn.

8:40 p.m. **Where Do We**
Go from Here? Dr. Noel Hinners, Director of the Smithsonian's National Air and Space Museum, discusses the future of planetary science and space exploration.

9:30 p.m. **End of**
Symposium.

All presentations will be followed by a brief question and answer period. At the end of each session all the panelists will be available for questioning

For the convenience of symposium participants, the Museum Cafeteria will be open from 5:30 to 7:00 p.m., and the Lion's Lair will be open for drinks from 3:30 to 7:00 p.m.

Ahnighito on the Move

Robert Peary/AMNH



Europeans exploring the Arctic regions in 1818 were puzzled to encounter an isolated group of Eskimos using knife blades and harpoon points of iron, rather than the standard ivory, antler or stone material. The Eskimos told English Sea Captain John Ross that they regularly journeyed to an "Iron Mountain" to secure their superior blade material. Although Ross never found their source, the tools he brought back had a high nickel content, which led scientists to identify the iron as meteoritic

With a steady supply of European iron from expedition and whaling ships, the Eskimos gradually stopped depending on the meteoritic iron. In May of 1894, Robert E. Peary, the man who was later to discover the North Pole, was guided to the iron source. His guides, Tallakoteah and Kessuh, explained that the three meteorites were originally an Inuit Woman and her Dog and Tent hurled from the sky by Tor narsuk (the Evil Spirit).

Convinced he wanted to secure them, Peary returned in 1895 and engineered the lifting and shipping of the 1-ton Dog and the 3-ton Woman. The 31-ton Tent (Ahnighito), however, was much too big for the tools and the ship

In 1896, Peary again returned to secure the giant. In his own words, this is the story of that "field season."

WORK ON "AHNIGHITO" IN 1896.

Determined to secure the giant, I chartered a larger ship, the Hope, of 307 tons net register, and went north in July of 1896, reaching Cape York August 9th.

The first thing to be done was to tear the heavenly visitor from its frozen bed of centuries, and as it rose slowly inch by inch under the resistless lift of the hydraulic jacks, gradually

displaying its ponderous sides, grew upon us as Niagara grows upon the observer, and there was not one of us unimpressed by the enormousness of this lump of metal. The expressions of the Eskimos about the "Saviksoah" (the great iron) were low but earnest, and it, and the other wonderful great irons (the jacks) which could tear it from its bed, awed them to the utmost.

Sliding the meteorite upon

I would like to order tickets to the Arthur Ross Meteorite Symposium. Participating, Donor, and Elected Members may purchase up to six tickets at the Member's price of \$3.00. Associate Members and students may purchase one ticket. All other tickets are \$5.00

Member and Student Tickets at \$3.00

Non-member tickets at \$5.00

Total Amount Enclosed

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: The Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York NY 10024

Name

Address

City

State

Zip

Daytime phone

Membership Category

Robert Peary/AMNH

steel rails laid upon heavy timbers across the few yards intervening between it and the crest of the hill, it was then rolled down the slope to the natural rock-pier.

It was interesting, though irritating, to watch the stubbornness of the monster as it sulked and hung back to the last inch. Under the strain of the two powerful chain blocks which transformed the wire cable and the big chain straps into rigid bars of steel, and urged by the resistless lift of the jacks, the huge brown mass would slowly and stubbornly rise on its side, and be forced to a position of unstable equilibrium; then everyone, except the men at the chain blocks down at the foot of the hill, would stand aside. A few more pulls on these, then cable and the chain straps would slacken, the top of the meteorite would move almost imperceptibly forward, the stones under the edge of revolution would begin to splinter and crumble, then, amidst the shouts of the natives and our own suppressed breathing, the "Iron Mountain" would roll over. When it struck the ground the harder rocks would elicit streams of sparks from its brown surface before they crumbled, the softer ones would dissolve into dust and smoke, and the giant would bury itself half its depth in the earth with the slow, resistless motion of a hydraulic punch cutting cold iron.

Arrived at the bottom of the slope, the meteorite was again lifted upon the rails and timbers, and slowly and laboriously pushed forward towards the edge of the pier.

Never have I had the terrific majesty of the force of gravity

and the meaning of the terms "momentum" and "inertia" so powerfully brought home to me, as in handling this mountain of iron. No purchase or appliance which we could bring to bear upon it, outside of the jacks, made the slightest impression upon it. When lowered slowly upon heavy timber blocking by the jacks, it settled resistlessly into the wood until it seemed as if it would never stop. The timber creaked and groaned in every fibre. If the meteorite slipped and fell even for half an inch, as it frequently would, in spite of every precaution, it would bite into the steel rails like a punch, and the rail itself would sink into the timber beneath. The inherent deviltry of inanimate objects was never more strikingly illustrated than in this monster. Had the matter been a subject of study for weeks by the celestial forger-master, I doubt if any shape could have been devised that would have been any more completely ill suited for handling in any way, either rolling or sliding or lifting.

The difficulties in getting a hold on it were also great. The shallowness of the conchoidal depressions on the surface left but few places where a jack could be applied. Even where it was possible to get a grip with the head of the jack, the hardness of the metal, combined with the shifting angle of contact between the jack and the surface of the meteorite, necessitated following the mass up closely with block and wedges, so that if the head of the jack, like a melon-seed pressed between thumb and finger, flew out, the meteorite could not fall back. In spite of every precaution, however, this sometimes

happened, and I have a half-inch steel link on which the meteorite fell a distance of perhaps an inch, which is flattened as if it were so much lead. These terrific blows were too much for my two thirty-ton jacks, which, owing to the failure of the sixty-ton one, had been constantly working beyond their capacity, and they gradually gave out, until at last I had only the unwieldy hundred-ton one left. Then progress became so slow that before I could get the meteorite close to the edge of the pier a furious south-easter broke up my iceberg barrier, and the pack ice of Melville Bay driving in upon the shore forced us to pull the ship out with haste to avoid having her crushed like an eggshell against the rocks.

There were many incidents of the work to suggest the supernatural even to the most prosaic mind. The dogged sullen obstinacy and enormous inertia of the giant against being moved, its utter contempt and disregard of all attempts to guide or control it when once in motion; and the remorseless way in which it destroyed everything opposed to it, seemed demonic.

I remember one particularly striking occasion. It was the last night of our stay at the island, — a night of such savage wildness as is possible only in the Arctic regions. The wild gale was howling out of the depth of Melville Bay through the Hope's rigging, and the snow

was driving in horizontal lines. Working about the meteorite was my own little party, and in the foreground the central figure, the *raison d'être* of it all, the "Saviksoah," the "Iron Mountain," towering above the human figures about it, and standing out black and uncomely. While everything else was buried in the snow

the "Saviksoah" was unaffected. The great flakes vanished as they touched it, and the effect was very impressive. It was as if the giant were saying: "I am apart from all this, I am heaven-born, and still carry in my heart some of the warmth of those long-gone days before I was hurled upon this frozen desert."

Very sincerely
R. E. Peary
Lieut. Engineer U.S.N.

The next year, Peary, his crew, and his wife and daughter sailed into Melville Bay for another try at Ahnighito. The ship *Hope* was outfitted with the sturdiest tools available, and they finally succeeded in wresting the giant mass from its frozen bed.

It was Peary's wife who sold the meteorites to the Museum. In a letter written to President Morris K. Jesup in 1906, she offered them for sale

"The meteorites are all I have and I feel that I should make an effort to turn them into money and invest it so that my children will have something with which they can be educated and fitted to earn their living. . . . Mrs. Jesup would scold me for bothering you but what can I do? . . . I have come to the conclusion that it is much easier to go to the Arctic and do the thing you are interested in and want to do than it is to stay at home, bring up the children, fight your husband's battles and look out for bread and butter for the family. I think hereafter I will do the exploring and let Mr. Peary take care of the home life."

Three years later, they settled on a price of \$40,000. Ahnighito, the Woman, and the Dog, will all be on display in the new Arthur Ross Hall of Meteorites.



(Top-left) Ahnighito propped up on posts at the end of the 1896 field season. Peary was forced to abandon it near the shore due to inadequate equipment and ice build-up in the bay. "Disappointed but not discouraged," Peary returned the next year with the *Hope* (left), and finally secured the meteorite. (Right) The crew posing just before the meteorite was moved across the bridge to the ship. Once on the ship, the meteorite's high iron content threw off the magnetic navigation system, leaving only the stars, ironically, for the return voyage.



Traditional Voices

On three Wednesday evenings, April 29, May 6, and May 20, at 7:00 p.m. in the People Center, the Touchstone Center will present *Versions of the Traditional*. The three evenings, featuring poetry of the Southwest Indians, the Nuer of Ethiopia, and the Eskimos, are in honor of the late Dr. Laura Boulton, ethnomusicologist, author, filmmaker, and explorer.

On April 29, David McAllester, Professor of Anthropology and Music at Wesleyan University, will read and discuss the music and songs of the Southwest Indians. He is one of the founders of the Society of Ethnomusicology and his research centers on religious arts of the Navajo. In his latest book *Hogans*, he juxtaposes his translations of Navajo house songs with photographs of their contemporary homes.

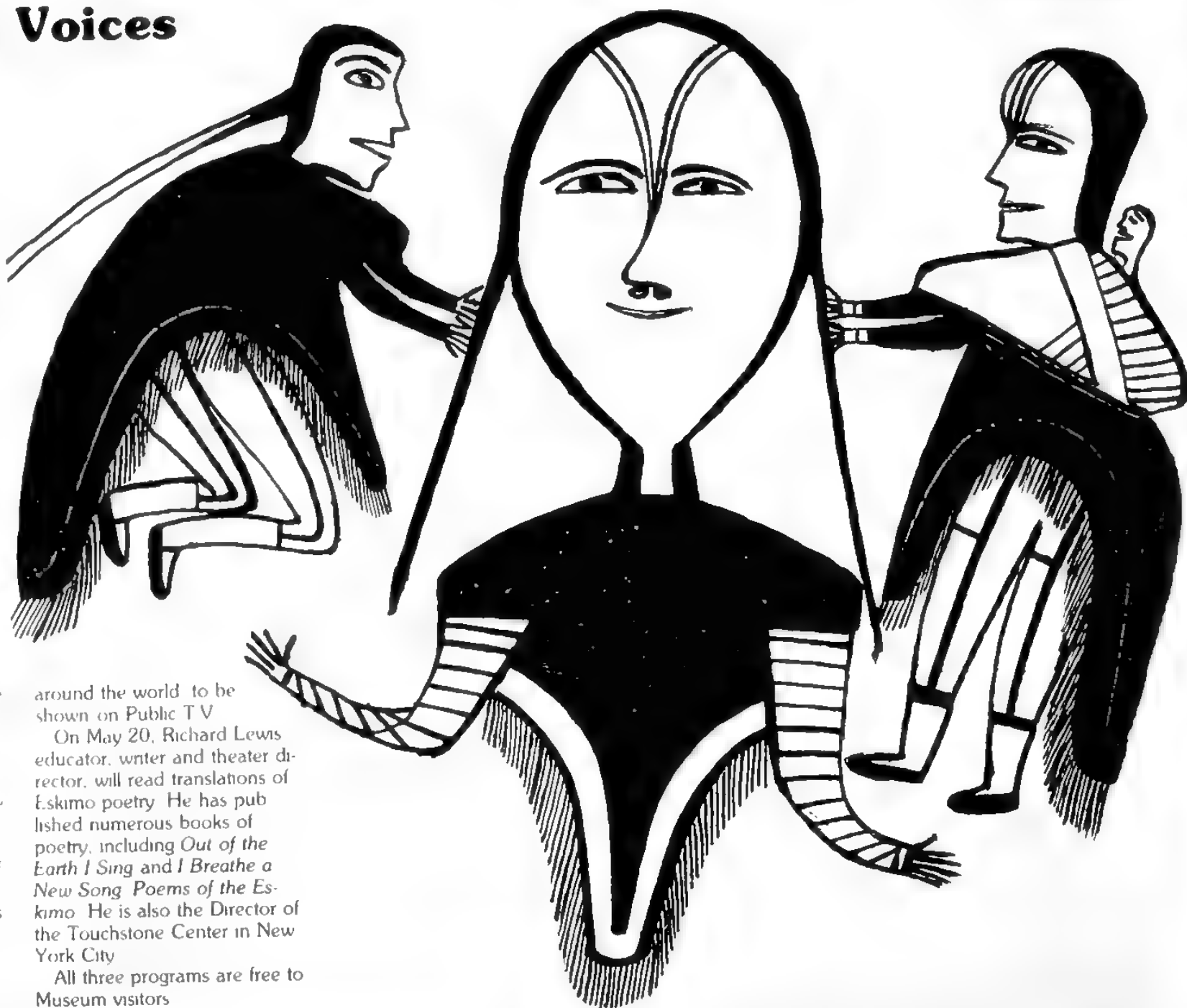
On May 6, Terese Svoboda will read selections from her translations of Nuer poetry. The Nuer live on the banks of the Nile in the southern Sudan.

Ms. Svoboda's translations of Nuer poetry have appeared in *Antaeus* and *Translation*. She is currently a co-producer at the Translation Center of Columbia University for a 5-film series on oral literature in performance.

around the world to be shown on Public TV.

On May 20, Richard Lewis, educator, writer, and theater director, will read translations of Eskimo poetry. He has published numerous books of poetry, including *Out of the Earth I Sing* and *I Breathe a New Song: Poems of the Eskimo*. He is also the Director of the Touchstone Center in New York City.

All three programs are free to Museum visitors.



Dances of the Orient

Sunday, April 5, Auditorium, 2:00 p.m.

On Sunday, April 5, at 2:00 p.m. in the Auditorium, there will be a performance by the Asian-American Dance Theatre. The group is made up of two co-existing companies, one performing traditional, and the other modern Asian dances. All of the dancers are natives of their respective countries, and began their training in Asia.

Founded as a means of bridging cultural differences

among Asian-American communities, the Dance Theatre presents a program of dances from China, Japan, the Philippines, India, Bali and Tahiti. This particular program will also feature two modern Asian works, developed in the United States.

The program is sponsored by the Department of Education and is free to all Museum visitors.



Focus on Southeast Asia

People Center, Weekends.

During the month of April, the cultures of Southeast Asia will be on stage in the People Center. Every weekend, from 1:00 to 4:30 p.m., programs from Indonesia, Thailand and Malaysia will be presented, focusing on the cultural elements of the performing arts in each country.

On April 4 and 5, Endo Suanda, a Javanese mask-maker, will demonstrate his craft. He will also explain the major characters in Javanese mythology, showing their respective dance movements.

Suarti and Suarni, two sisters from Bali, will perform Balinese dances April 18 and 25. While students of dance in Bali, they both won, in separate years, the all-island competition in traditional dance.

There will be other dance performances each day, ranging from Central Javanese to Balinese to Malaysian, as well as combined programs of folklore and dance from the various countries.

Other events include *Stories of Southeast Asia* with Laura Simms, and films on aspects ranging from *Family Life in Malaysia* to *Harvest at Nong Lub* (Thailand).

Check the full-page calendar in this issue for complete listings. The Southeast Asia Month is presented by the Department of Education and is free to Museum visitors. Note that the People Center will be closed Easter Sunday, April 19.



Suarti and Suarni/Photo: C. Levitt

Museum Notes

Special Exhibitions

The Arthur Ross Hall of Meteorites. Opening April 30 The Museum's newest permanent exhibition hall, featuring Ahnighito, the largest meteorite "in captivity," as well as many smaller ones and assorted moon rocks.

The Gardner D. Stout Hall of Asian Peoples. Contains over three thousand works of art and artifacts, on display in both chronological and ethnological order.

Hopi Kachina: Spirit of Life. (Gallery 3, third floor.) Through May 8. A nationally touring exhibition about Hopi culture, particularly the role of the kachina, friendly spirit messengers to the deities.

Bird, Cloud, Snake: Hopi Symbols. (Akeley Gallery, second floor.) Through May 15. An overview of decorative symbols for agricultural fertility, and their use in modern Hopi art.

Gossamer Albatross. (Roosevelt Rotunda, second floor.) Through May 30. An exhibit on the struggle to achieve human-powered flight, including the Gossamer Albatross, which flew across the English Channel in June of 1979.

Profiles of the Past: The Geology of Three Southwest Canyons. (Gallery 77, first floor.) Through May 1. Photographs, rock samples, geologic maps, fossils, and other illustrative material on the geology of the Grand, Bryce, and Zion canyons.

Joseph Wolf: Natural History Artist. (Library Gallery, fourth floor.) Through May. An exhibit of natural history illustrations by Joseph Wolf, both of the Birds of Paradise and of many wild cats

Programs and Tours

People Center Southeast Asia Month. Programs featuring the performing arts of Southeast Asia will be presented on weekends from 1:00 to 4:30 p.m. (Closed Easter Sunday, April 19). For complete listings see the full-page calendar. (See article page 6.)

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and

handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights

Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

Planetarium Events

The Drama of the Universe. This sky show at the Hayden Planetarium presents

some of the most recent facts, theories, and astronomical discoveries. In addition, this series of short "acts" will explore astronomical phenomena such as the stars of the season, comets, and meteors.

Sky show times
Weekdays: 1:30 and 3:30 p.m.
Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

The Art of April Laughton The representational works of an illustrator for *Science Digest*. On display on the first floor of the Planetarium. Through April 28.

For other Planetarium information, call 873-1300, ext. 389 between 9:00 a.m. and 5:00 p.m. weekdays.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Coat Checking. The coat check rooms are located in the basement next to the cafeteria, and on the second floor of the Roosevelt Rotunda. There is a charge of 40¢ per coat.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852

Southwestern Research Station, Portal, Arizona, 85632

Urban Fossil Hunts

This spring, Sidney Horenstein of the Museum's Department of Invertebrates, will lead Museum Members on a fossil tour down Fifth Avenue and on a nature walk through Inwood Park.

Fossils of Fifth Avenue: This tour begins with a look at 40-million-year-old fossils embedded in the walls of the Sherry Netherland Hotel, and ends at Rockefeller Center, where Members will view 450-million-year-old ancestors of the chambered nautilus. In between these stops, Members will see ancient coral reefs from Missouri, extinct chambered animals from France, and 100-

million-year-old clams from Italy. And of course a tour of Fifth Avenue would not be complete without looking at the fossils at Tiffanys. Mr. Horenstein will point out these various fossils and also explain how the different building stones were formed, quarried, and what they tell us about the geologic history of the Earth.

Inwood Park: On this tour, Sidney Horenstein will share with Members the delights that greet visitors in Manhattan's last remaining woodland. Tulips, lindens, beeches (including the island's largest copper beech tree), spicebushes and numerous other trees, both native and

foreign, grace the park's landscape. The park also contains glacial pot holes, whale backs, and other features which provide vivid evidence that glaciers crept across the region tens of thousands of years ago. From the park's spectacular outlooks over the Hudson River, Mr.

Members exploring for fossils near Rockefeller Center with Sidney Horenstein. He will offer both his famous Fossils of Fifth Avenue and a new nature walk of Inwood Park

Horenstein will explain the geologic forces that shaped the lower Hudson Valley and New Jersey's magnificent Palisades. Besides its natural history, the park is also rich in human history, and Members will view the caves and shell heaps that were once used by Native Americans

and see where the Hessian soldiers bivouaced during the Revolutionary War.

The tours are open only to Participating, Donor, and Elected Members of the Museum. The cost of each tour is \$3.50. To join please fill out the adjacent coupon.

Please register me for the tours marked below (Indicate a first and second choice of times):

Inwood Park

10:30 a.m. tour Sunday, May 3, 1981
1:00 p.m. tour Sunday, May 3, 1981.

There will be an overflow tour at 3:00 p.m. if the other two tours are filled. Please check this space if you can attend this tour.

Number of people _____

Fossils of Fifth Ave

10:30 a.m. tour Sunday, June 7
1:00 p.m. tour Sunday, June 7

There will be an overflow tour at 3:00 p.m. if the other two tours are filled. Please check this space if you can attend this tour.

Number of people _____

I have enclosed my check for \$ _____ (\$3.50 per person)

Name _____

Address _____

City _____

State _____

Zip _____

Daytime phone _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Urban Treks, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024



Kate Benoit-Mendez

Sun

Mon

Wed

Thu

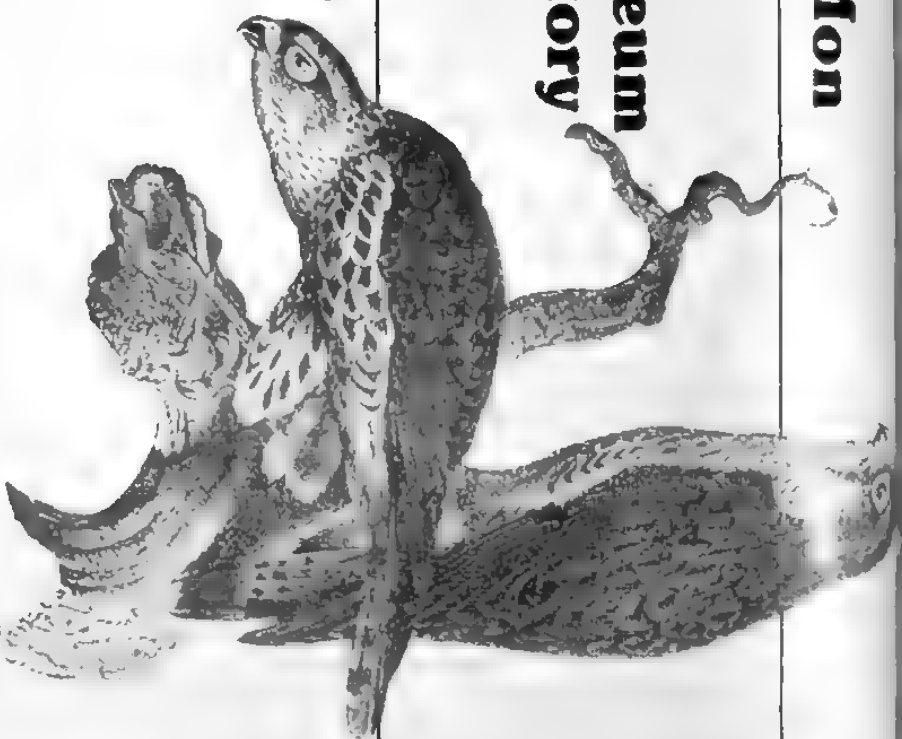
Fri

Sat

April 1981

American Museum of Natural History

5 1:00-4:30 p.m. Southeast Asia Month. People Center. Mask Making and Mythology. Balinese Dance. Folklore and Dance of Thailand. Films: Angkor Wat. The Golden Tower. Free.
2:00 p.m. Asian-American Dance Theatre. Auditorium. Free. (See article page 6.)



12 1:00 p.m. and 3:00 p.m. **Birds of Prey with Bill Robinson.** Family Member's Program. Auditorium. Free to Members, \$3.00 for non-members. (See article page 3.)

12:45 p.m. American Cetacean Society. Rm. 319. Free.
1:00-4:30 p.m. Southeast Asia Month. People Center. Music of Indonesia. Dances of Malaysia. Introducing Indonesian Films: see April 11. Free.

19 Easter Sunday. Passover. People Center closed.

20

21 1:00-4:30 p.m. **Skins and Bones.** People Center. Free. (See article page 2.)
8:00 p.m. New York Entomological Society. Rm. 129. Free.

22 7:30 p.m. **Lapidary and Gem Society.** People Center. Free.

23

24

25 1:00-4:30 p.m. Southeast Asia Month. People Center. Balinese Dance. Films: The Temple of 20 Pogodas. Angkor Wat. Free.

13 7:30 p.m. Animal Behavior Society. Rm. 129. Free.

14 8:00 p.m. Linnaean Society. Education Hall.

15 2:00 p.m. Religions of South Asia. Gallery Talk with S. Gronewold. Assemble at first floor information desk. Free.

16 2:00 p.m. The American Plains. People and the Land. Gallery Talk with J. Munoz. Assemble at first floor information desk. Free.

17

11 1:00 p.m. African Presence in the Americas. Focusing on Dance. Lecture-demonstration with Lavina Williams. Auditorium. Free.
1:00-4:30 p.m. Southeast Asia Month. People Center. Central Javanese Dance. Music of Indonesia. Stories of Southeast Asia. Films: Family Life in Malaysia. Chiang Mai: Northern Capital. Free.
First Quarter (half moon)

8 Members' Behind-the-Scenes Tours. (See article page 1.)

9 2:00 p.m. All About Fishes. Gallery Talk with S. Buttm. Assemble at first floor information desk. Free.

10

1 2:00 p.m. Introduction to the Gardner D. Stout Hall of Asian Peoples. Gallery Talk with S. Gronewold. Assemble at first floor information desk. Free.
7:45 p.m. Amateur Astronomers Association. Education Hall. Free.

2 2:00 p.m. Plant Geography of North America. Gallery Talk with H. Schiller. Assemble at first floor information desk. Free.

3

4 Members' Behind-the-Scenes Tours. (See article page 1.)

11:00 a.m. New York Map Society. Rm. 129. Free.
1:00-4:30 p.m. Southeast Asia Month. People Center. Dances of Central Java. Mask Making and Mythology. Folklore and Dance of Thailand. Films: Angkor Wat. The Golden Tower. Free.
New Moon (not visible)

26 1:00-4:30 p.m. Southeast Asia Month. People Center. Dances of Malaysia. Folklore and Dance of West Java. Films: Harvest at Nong Lub. Angkor Wat. Free.

27 Last Quarter (half moon)

28 8:00 p.m. Linnaean Society. Education Hall. Free.
8:00 p.m. Met Grotto. Nar'i Speleological Society. Rm. 129. Free.

29 1:30-9:30 p.m. **Arthur Ross Meteorite Symposium.** Tickets required. (See article page 4).

30 Opening of the new Arthur Ross Hall of Meteorites.

2:00 p.m. New York Turtle and Tortoise Society. Rm. 129. Free.
2:00 p.m. New York Paleontological Society. Rm. 426. Free.

Begin Daylight Savings



Martin and a Kestrel

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 5, No. 5 May/June 1981



The Opening of The Arthur Ross Hall of Meteorites

Thomas Jefferson, when confronted with scientific evidence for meteorites in 1807, was quoted as saying, "I'd rather believe that a Yankee professor would lie than that rocks could fall from the heavens." In 1894, Eskimos, relating the myth about three of the Cape York meteorites, claimed that they were an Innuït Woman with her Dog and Tent that had been hurled from the sky by an evil spirit.

Scientific credibility and popular understanding of meteorites have come a long way since then. Just how far is apparent in the new home for the Museum's extraordinary collection, the Arthur Ross Hall of Meteorites. What are meteorites? Where do they come from and what happens when they hit? These questions and more are explored in the new hall.

At the center is the enormous

Ahnighito, the 31-ton Tent of the Eskimo myth. This is the largest meteorite in captivity anywhere in the world. Examples of all known types of meteorites are displayed, with information on where each was found. There is also a map explaining where meteorites have been found most frequently and why. Audio-visual presentations give an historical perspective, including old footage of the Tunguska event, during which thousands of square miles of Siberian forests were destroyed; scientists suggest that the area may have been struck by a comet. In addition there are moon rocks from NASA which illustrate the three major rock types found on the moon's surface.

Dr. Martin Prinz, Chairman of the Department of Mineral Sciences and curator of the hall, says, "We are try-

Astronaut James Irwin collecting on the moon. Samples of the three major rock types found on the moon's surface will be on display in the new Arthur Ross Hall of Meteorites.

ing to increase the public's awareness of the important and exciting advances in the study of meteorites and related planetary sciences. Meteorites tell us about the beginning of the solar system, and the relationship between the planets. They put the history of the earth in perspective."

There will be a special Members reception and viewing of the hall Tuesday, May 19, from 5:45 to 9:00 p.m. For more information see page 3.

Summer Rotunda

Rotunda now goes bimonthly through the summer. The next issue will come out in the middle of June to cover the *Shakespeare: The Globe and the World* exhibition, and will contain all available information for July and August. The calendars for May and June are on pages 8 and 7 respectively.

Rain Forest Rhythms

Dancers, drummers, and singers, all natives of Suriname, South America, will visit the Museum as a prelude to the exhibition *Afro-American Arts from the Suriname Rain Forest*. The exhibition will come to the Museum in October of this year.

Page 2

A Midsummer Night's Dream

Come celebrate the opening of *Shakespeare: The Globe and the World* at a special Members' reception.

Page 3

Destination: New York

Moving a 64½-foot by 8-foot Northwest Coast Indian canoe from the Queen Charlotte Islands across the continent to the Museum proved to be more of a challenge than Museum officials expected. The trip was eventually routed through Panama.

Page 5

Music and Dance of the Maroons

Wednesday, May 6, 7:30 p.m., Auditorium

In a special program at the Museum, five men and three women from Suriname, South America, will give a performance of dancing, drumming and singing. The performers are Maroons, natives of Suriname, who are visiting the United States to supplement the touring exhibition *Afro-American Arts from the Suriname Rain Forest*. The exhibition will open in Gallery 3 of the Museum in October of this year.

The program will feature both secular and religious music, including finger-piano compositions; singing, drumming, and dancing for various

forest spirits and warrior gods; popular songs that recount local gossip, and the sensuous women's dances with which men are welcomed home after a long absence from tribal territory.

The Maroons are descendants of African slaves who escaped from coastal plantations in the 17th and 18th centuries and established villages along the inland rivers. Joining into small bands, they and their descendants waged guerrilla warfare against the colonists and, after 150 years, won their freedom. Their isolation in the rain forests has allowed their African traditions to remain relatively in-

tact, and they have been called the most African of all Afro-Americans.

The program, presented by the African-American and Caribbean Programs of the Department of Education, will be in the Museum Auditorium and free to all Museum visitors.

Dancers, drummers and singers from Suriname, South America are coming to the Museum as a prelude to a larger exhibition on their arts and crafts.



Jean Hurault



Folger Shakespeare Library

To open the Museum's Shakespeare Summerfest, Joseph Papp, producer of the New York Shakespeare Festival, will give a talk entitled *Shakespeare's World is Our World*, on Wednesday, June 17, at 7:30 p.m. The Summerfest is being held to supplement the touring exhibition *Shakespeare: The Globe and the World*, which opens in Gallery 3 of the Museum on June 18. More information on the exhibition and the Summerfest will be included in the next issue of Rotunda.

Members' Memo

Toll Free Number

When you become a Member of the American Museum of Natural History, we put your name in a computer system, which automatically sends you your card and creates the labels for your *Natural History* magazine and your Rotunda. We keep the list filed by zip code and last name. When anything goes wrong with your Membership, we call the computer operators, and they tell us about your most recent order and whether they can see any problem with the delivery of your benefits.

As Members, you can also have access to the file by calling the following toll free numbers: (800) 526-0331, or from New Jersey, (800) 932-0834.

The number is most useful when you want to put through a change of address or a name correction. It is the quickest way to accomplish the change.

There is one other way the number may be of some use to you, and that is in checking to see if your renewal has been processed. For example, if a second renewal notice comes a month or so after you have renewed, you could phone to determine whether we received your payment.

If anything they tell you seems incorrect, call us for help at the Membership Office, (212) 873-1327. The computer operators can only tell you what they see on their computer terminals. We in the Membership Office will be happy to interpret the information for you and to adjust it if necessary. We are also the people to call if you need a Membership

card or a missed issue. For your future use, the toll free numbers are also listed on the masthead of *Natural History* magazine each month.

If you ever write us about a Membership problem, please include a daytime telephone number, so we can reach you if we need more information.

Jane Goodall Lectures

The response to the Jane Goodall lectures was overwhelming, and both the May 12 and May 13 lectures are completely sold out.

I would like to thank the L.S.B. Leakey Foundation for their help in bringing Jane Goodall to the Museum. The Foundation is the sponsor for her United States tour and they also arranged for her to give an extra lecture at the Museum. The foundation supports a number of scientific projects connected with the study of human origins, behavior and survival, including Dr. Goodall's own research. If you would like additional information about the foundation, please write to L.S.B. Leakey Foundation, Foundation Center 13-83, Pasadena, California 91125.

Kate Bennett-Mendez

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 5
May/June 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
James Budenholzer — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1981 American Museum of Natural History. Second-class postage paid at New York, N.Y.

The Membership Office cordially invites
Participating, Donor, and Elected Members
to a reception and viewing of

Shakespeare: The Globe and the World

Thursday evening, June 18, or Tuesday evening, July 28
6:00 to 9:00 p.m.



Shakespeare: The Globe and the World

Featuring rare books, prints, costumes and other items of Shakespeareana from the unparalleled collection of the Shakespeare Folger Library, the exhibition brings to life the works of Shakespeare and the world of Elizabethan England. Visitors enter Shakespeare's world through a series of graphic environments, from rural Stratford-on-Avon to the Court of Elizabeth I. Among the treasures visitors will encounter are a panoramic view of London, engraved in 1625; De Witt's portrait of Elizabeth; the Queen's personal Bible; early quarto editions of Shakespeare's plays; and Folger's famous Adams Model of the Globe Theater. The historic highlight of the exhibition will undoubtedly be two editions of the 1623 First Folio of Shakespeare's works.

Shakespeare: The Globe and the World has been made possible by grants from the National Endowment for the

Humanities, Metropolitan Life Insurance Company, Exxon Corporation, and the Corporation for Public Broadcasting

Company will provide the evenings' entertainment with Renaissance singers, dancers, musicians, and players performing skits from Shakespeare plays

Refreshments

Partake of ale, wine, and cider at a cash bar in the Hall of Ocean Life

Entertainment

The Potter's Field Theater

The reception is by reservation only. If you would like to attend, please fill out the attached coupon. A confirmation card will be mailed to you.

I would like to attend the reception for *Shakespeare: The Globe and the World*. Please indicate a first and second choice (if possible)

Thursday, June 18, 1981 from 6:00 p.m. to 9:00 p.m.
Tuesday, July 28, 1981 from 6:00 p.m. to 9:00 p.m.

Number of people

Name

Address

City

State

Zip

Daytime phone

Please mail with a self-addressed, stamped envelope to: Shakespeare Reception, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

The Membership Office cordially invites
Participating, Donor, and Elected Members
to a reception and viewing of the new

Arthur Ross Hall of Meteorites

Tuesday, May 19, 5:45 to 9:00 p.m.

The Arthur Ross Hall of Meteorites

Members will have a private viewing of the new home of our magnificent meteorite collection. The new hall features the 31-ton Ahnighito meteorite, moon rocks, and exhibits about the origins and significance of meteorites. (For a more detailed description of the hall, see the article on page 1.)

Bringing Back Ahnighito and A New Look at the Old Moon.

6:00, 7:00, and 8:00 p.m.
Auditorium

Kate Bennett-Mendez will begin the Auditorium program with a short talk on how Ahnighito was brought to the Museum. Using photographs

from the Museum archives, she will describe how Ahnighito was carted across the Arctic tundra and loaded on a ship, its arrival in New York and its trip via horse-drawn wagons through the streets of New York to its final destination at the Museum.

The program will continue with NASA's 1980 film, *A New Look at the Old Moon*. The Apollo Lunar Landing missions revolutionized scientists' ideas about the history of the earth, the moon, and our solar system. The film uses NASA footage to describe the lunar investigations and to simulate possible cosmic events that illustrate the new theories scientists have developed about the moon in the past decade. At the end of the film, Martin Prinz, Chairman of the Museum's Department of Mineral Sciences, will answer any questions the audience may have about meteorites and planetology.

Refreshments

Free coffee, tea and punch will be served in the Hall of Northwest Coast Indians throughout the evening.

The Astronomy Computer

Members are welcome to ask the Hayden Planetarium's "Astronomy Computer," a unique mechanical creation, any questions they may have about space and astronomy.

Admission

The reception is free but open only to Participating, Donor and Elected Members of the Museum. Your Membership Card is your ticket of admission. Free parking will be available to the capacity of the Museum Parking Lot. Please use either the Parking Lot entrance or the Lower Level Central Park West entrance.



Graduation, by Leaps and Bounds

Sunday, May 10, 2:00 p.m., Auditorium

Four years ago a talented group of students joined the class of 1981 at the High School of Performing Arts. Graduating this spring, they will present a preview of their final dance concerts at the Museum, performing classical ballet and modern dance to the music of Dvořák, Gershwin and Scott Joplin. There will also be selections from *There Are Dreams*, a modern work, inspired by Dr. Martin Luther King, Jr. set to a piece of original music.

The High School of Performing Arts, which recently gained widespread recognition in the

movie *Fame*, was founded in 1948 to encourage creative arts in gifted students. This is the third year they have performed at the Museum.

The performance will be in the Auditorium and is free to all Museum visitors.

Dancers from the High School of Performing Arts will present one of their graduation dance concerts at the Museum.



Arabian Artifacts

A collection of Saudi Arabian artifacts will be displayed on the second floor of the Roosevelt Rotunda beginning May 19. The focus of the exhibit will be a Bedouin tent filled with daily objects representing the life of these nomadic people.

In addition, Saudi Arabian cultural development will be traced with pottery, glass, bronze objects, jewelry, and costumes, while a photo essay displays life as it is today.

The exhibit was compiled by the Saudi Arabian Ministry of Education, Department of Antiquities and Museums. Intended to supplement the Saudi Arabian sections of the Gardner D. Stout Hall of Asian Peoples, the exhibit is free to all Museum visitors.

Cosmic Conventions

Saturday, May 9, and Wednesday, May 13
Outside of the Planetarium



Saturday, May 9, is National Astronomy Day, and amateur astronomers from all over the New York City area will make their way to the Hayden Planetarium. Here, weather permitting, the Amateur Astronomers Association will set up telescopes for direct solar observation and evening stargazing. Special filters will be

used during the day to allow viewers to see solar flares and sunspots.

Also, as the sun goes down Wednesday, May 13, amateur astronomers will again convene for one of the Association's monthly Star Parties. While no one can guarantee a cloudless night, those who attend will find themselves able to see through

the opaque New York City air with the help of telescopes, many of them made in the Optical Division of the Amateur Astronomers Association. These will be set up to observe planets, stars, nebulae, and the like. Dr. Fred Hess, an instructor at the Hayden Planetarium, will be on hand to answer questions.

The Party is free to all who attend. A voluntary donation booth will be available. For more information please send a self-addressed, stamped envelope to the Optical Division, Amateur Astronomers Association, American Museum-Hayden Planetarium, 81st Street and Central Park West, New York, NY, 10024.

Bringing Back The Great Canoe

The 64½ by 8-foot dugout canoe on display in the 77th Street foyer is so big that few people realize it was fashioned from a single tree. It was acquired for the Museum in 1882 by Israel W. Powell, the Indian Commissioner of British Columbia, whom the Museum commissioned to collect "a complete series of ethnological specimens of the region." Anthropologists of that period had noted that the cultures of the Northwest Coast Indians were in a state of decline, and Museum leaders recognized that if they did not collect material soon, the opportunity would be lost forever. Powell, over the course of three years, collected more than 790 artifacts, including the canoe, which he bought from the Indians living in the

area of the Skeena River.

Because travel was almost entirely by water, the canoe technology of the Northwest Coast cultures was highly developed. Canoes varied in size from the eight-foot one-man canoe to the great 70-foot-long ocean-going vessels, capable of carrying fifty or sixty people.

All were created by hollowing out the center and adding the sides of a single cedar log. Water was poured inside and heated with hot rocks, and when the cedar had become soft, the sides were pressed out and held by braces. It was in this way that the Museum's canoe got its width of 8 feet, although the original diameter of the tree was less.

The finished canoe was painted black and the bow decorated

with a carved wolf and a painted killer whale. In their mythology, killer whales are the most respected of all living things, being the strongest hunters. The painting on the stern depicts a raven, the Indians' mythological character who had an essential role in the creation of the earth and all other aspects of importance. As a common, sociable bird of the Pacific shore, it is imbued with mythological attributes arising in part from its voracious appetite and its cleverness in achieving desired ends.

Alan Wardwell, writing about the canoe in 1978, noted it was "the largest, best preserved, most beautifully made and painted canoe in any collection."

After Powell bought it, Haida

villagers paddled the new canoe more than 500 miles down the Pacific Coast of Canada to the port of Victoria. Since he was fearful that during its long journey to San Francisco it would be "exposed to the action of the sun and split," Powell had it reinforced with ribs.

It was loaded on a schooner, but early on the journey, in spite of all precautions, a wayward sail threw its boom against the canoe's hull and cracked it. James Terry, the archeologist hired to facilitate its transport, had the canoe unloaded and kept at Puget Sound until a suitable iron vessel arrived that could safely take it to San Francisco.

Heber Bishop, a New York businessman who was financing the Northwest Coast collecting, got a free ride for the canoe to New York via the Isthmus of Panama. In San Francisco it was firmly bolted to a wooden cradle so it could be handled by block and tackle. It was then put on the deck of a steamer and taken to Panama.

The Isthmus had to be crossed by train, but loading the canoe posed a problem. because of its length, two railroad cars were required to hold it. The sharp turns in the tracks, however, made this impossible. The solution was to fasten the bow of the canoe to the front car and to permit the stern to swing loosely on greased guys on the rear car.

It travelled again by steamer to New York, and then uptown from the docks by a horse-drawn truck.

For the next twenty-five years, the canoe hung from the ceiling of the Northwest Coast Indian Hall, while the Museum continued to build its collection of Northwest Coast artifacts, and to periodically upgrade the materials displayed in the cases.

Elsewhere in the Museum, President Morris K. Jesup was urging the creation of exhibits that would excite greater public attention. Natural surroundings for the prepared animal exhibits were made with progressive sophistication, and the dinosaur bones were taken out of the drawers and linked together to stand in lifelike poses.

Finally, in 1910, the canoe benefited from this exhibition policy. Museum Director Herman C. Bumpus conceived of the idea of using the canoe in an "open exhibit." George T. Emmons, who had specialized in collecting artifacts from the Northwest Coast since 1882, suggested that the canoe be used to tell the story of a chief and commoners going to a feast in another village. It was a perfect opportunity to feature the best of the collection by showing people of different rank in the highly stratified society.

The Herculean task of turning concept into reality was given to sculptor Sigurd Neandross. He prepared a sketch-model in clay of forty Indians arriving at the ceremony. The canoe, having reached the beach, would be held in position by the paddlers while speeches were rehearsed. Two polemen would steady the canoe; Neandross used them quite cleverly to help balance the entire exhibit.

With his model accepted, Neandross began to sculpt the figures, portraying the Indians in "physique, garb and action."

Existing methods of plaster cast mold-making proved less than satisfactory when working with live humans: the weight of the plaster altered the shape of the subjects. Through experimentation, Neandross and his crew found that a ¼-inch layer of paraffin, applied to the body prior to the plaster work, provided enough additional support to mold perfect casts.

In order to protect the Museum's priceless artifacts from deterioration in this open air exhibit, all adornments — masks, rattles, and even the smallest ivory ornaments — were faithfully reproduced to the most minute detail. This insured accuracy of information even though all pieces were replicas.

The skins and woven clothing were copied in burlap, then dipped in glue-water before being draped on the figures. The garments were allowed to stiffen with a natural arrangement of folds. A thin layer of plaster and glue made each piece of clothing ready for painting and completion.

When completed, the exhibit contained only half of the planned figures, but achieved the desired effect. Commenting about the attained exhibition goals in the *American Museum Journal*, editor Mary Cynthia Dickerson proclaimed that, "The ideal of exhibition in a people's museum must be accuracy and completeness in truth in such combination with beauty, life, and action that there is produced a resultant of human interest and education force."

The canoe stood in the center of the hall until 1960 when it was moved to its present central position in the 77th Street foyer.

— Kate Bennett-Mendez



AMNH



AMNH



(Top) Sigurd Neandross, the designer of the canoe exhibit, preparing ornaments for final decoration on one of the figures. Each ornament had to be accurately reproduced from the Museum's collection to insure authenticity. (Middle) The finished canoe, portraying a chief and commoners going to a ceremony, stood in the Hall of Northwest Coast Indians until 1960, when it was moved (bottom) to its present location in the 77th Street Foyer.

AMNH

Museum Notes

Special Exhibitions

The Arthur Ross Hall of Meteorites. Opening April 30 The Museum's newest permanent exhibition hall, featuring Ahnighito, the largest meteorite "in captivity," as well as many smaller ones and assorted moon rocks. (See articles page 1 and page 3.)

The Gardner D. Stout Hall of Asian Peoples. Contains over three thousand works of art and artifacts, on display in both chronological and ethnological order.

Shakespeare: The Globe and the World. Opening June 18 in Gallery 3. A collection of Shakespeareana from the Folger Library in Washington D.C. (For Members' reception see article page 3.)

Hopi Kachina: Spirit of Life. (Gallery 3, third floor.) Through May 8. A nationally touring exhibition about Hopi culture, particularly the role of the kachina, friendly spirit messengers to the deities.

Bird, Cloud, Snake: Hopi Symbols. (Akeley Gallery second floor.) Through May 15. An overview of decorative symbols for agricultural fertility and their use in modern Hopi art.

Gossamer Albatross. (Roosevelt Rotunda, second floor.) Through May 31. An exhibit on the struggle to achieve human-powered flight, including the Gossamer Albatross, which flew across the English Channel in June of 1979.

Joseph Wolf: Natural History Artist. (Library Gallery, fourth floor.) Through May. An exhibit of natural history illustrations by Joseph Wolf, both of the Birds of Paradise and of many wild cats.

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented in the People Center weekends from 1:00 to 4:30 p.m. Refer to the full-page calendar for specific events.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum

Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

The Drama of the Universe. This sky show at the Hayden Planetarium presents some of the most recent facts, theories, and astronomical discoveries. In addition, this series of short "acts" will explore astronomical phenomena such as

the stars of the season, comets, and meteors.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.
Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Photographs of the Sun, by Edwin Hirsch. An amateur photographer's astronomical work with H-alpha filters. On display on the first floor of the Planetarium, May 1 through June 26.

Sidney Horenstein's Fossils of Fifth Avenue tour, on Sunday, June 7, begins with a look at 450-year-old fossils embedded in the walls of Rockefeller Center. On Sunday, May 3, he will lead a nature walk through Inwood Park. Both tours are open only to Members and cost \$3.50 per person. For information call (212) 873-1327.



Rockefeller Center, Inc.

Visions of Antiquity

Mondays, May 4, 11, 18
Auditorium, 7:00 p.m.

The American premiere of *The Plunderers*, a BBC/Time-Life documentary on black market archeology, will be part of a film series entitled *Visions of Antiquity: Licit and Illicit*. The program will be presented on three Monday evenings in May by the New York Society of the Archaeological Institute of America. Full-length color films will be shown each evening, followed by informal discussions with invited guests.

The Plunderers, which will be shown Part I on May 4 and Part II on May 11, investigates the illegal digging and marketing of finds in Turkey and Italy. Included is one of the world's most celebrated "hot-pots," the Euphronios Vase, bought by the Metropolitan Museum of Art for more than a million dollars. The destruction of the Etruscan tombs and many of the Egyptian temples and graves in the Valley of Kings and Nobles is also documented.

On Monday, May 18, *The Royal Archives of Ebla* will be shown, presenting an overview of the recent scientific excavations in Syria. More than 17,000 clay tablets have been unearthed, with biblical-sounding names that have aroused not only great interest but controversy as well.

Tickets for the series will cost \$18.00 (\$12.00 for Members). Please note that no single evening tickets will be sold. For information please call the New York Society of the Archaeological Institute of America at (212) 353-0808.

Poetic Traditions

Wednesdays,
May 6 and 20,
People Center,
7:00 p.m.

Poetry is a strong but underrated means of learning about different cultures. This month the poetry of the Nuer, who live in southern Sudan, and the Eskimo, will be voiced in two programs entitled *Versions of the Traditional*.

On May 6, Terese Svoboda will read selections from her translations of Nuer poetry. She is currently a co-Producer at the Translation Center of Columbia University for a 5-film series on oral literature around the world, and her translations of Nuer poetry have appeared in *Antaeus* and *Translation*.

On May 20, Richard Lewis, educator, writer and theater director, will read translations of Eskimo poetry. He has published numerous books of poetry, including *Out of the Earth I Sing* and *I Breathe a New Song: Poems of the Eskimo*. He is also the Director of the Touchstone Center in New York City.

Both programs are free to all Museum visitors.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details.

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852.

Southwestern Research Station, Portal, Arizona, 85632.

Children's Section

By the Light of the Moon

Composite of the first and last quarter of the moon as taken from a telescope at the Lick Observatory in California. Can you see the maria, rays, and craters?

The moon is more than 200,000 miles from the earth. Even at that distance, many features of the moon can be seen with a good pair of binoculars. The three easiest moon features to see from the earth are maria, craters, and rays.

Maria: As you look at the moon from the earth, the first thing you will notice is that the moon is divided into bright and dark areas. The bright areas are mountains and craters, and the dark areas are plains or maria (*Mare* is the Latin word for sea). Maria are the largest lunar features. They were formed when the moon was very young. It is believed that meteorites hit the moon, forming huge craters, and that these craters were then filled by lava flows.

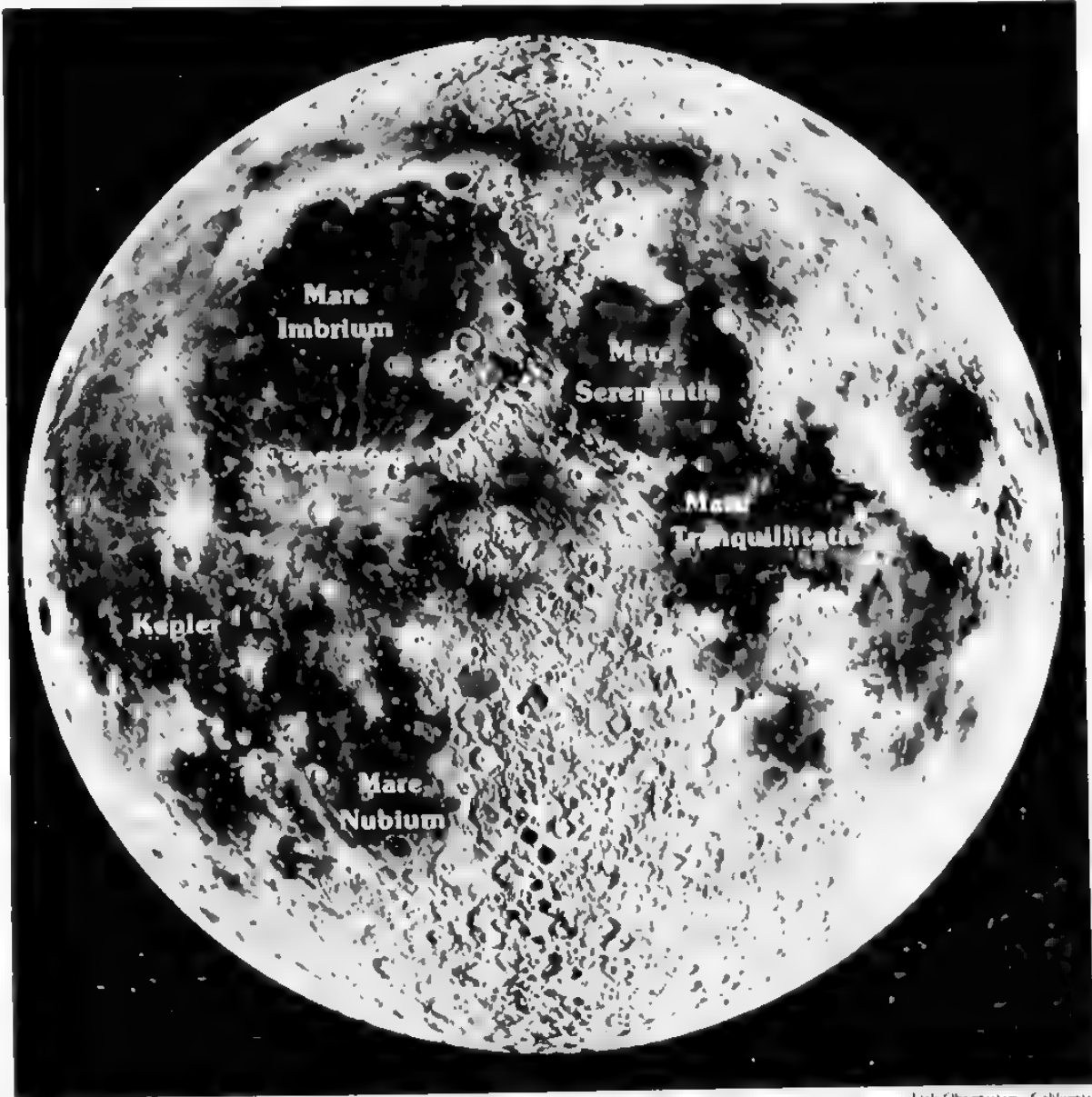
Craters: There are over 30,000 craters on the near side of the moon. Two of the easiest to see are Kepler and Copernicus (see photo). Each crater is more than fifty miles across, and their walls are eight times taller than the Empire State building. Scientists believe that while some craters on the moon may be volcanic in origin, most were formed by meteorites.

Rays: The bright streaks that radiate from some craters are


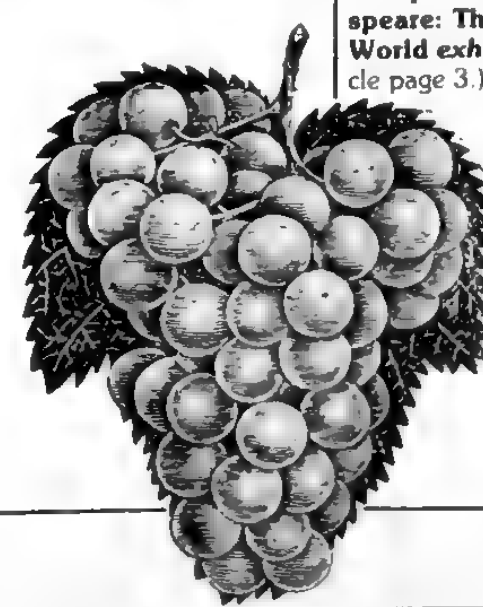
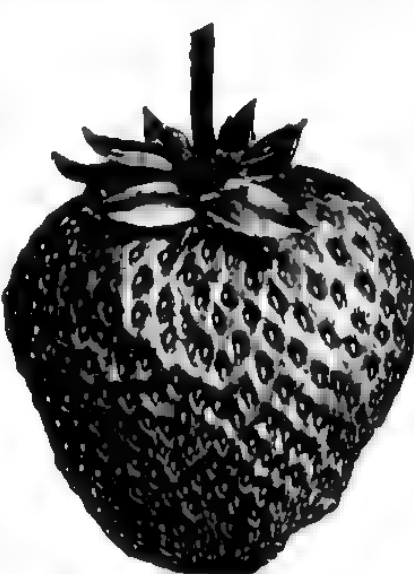
called rays. These rays can be hundreds of miles long. When a crater is formed, rocks and other materials are thrown out of it. Scientists think that the rays were formed by some of this ejected material.

You may be surprised to learn that the best time to look at the moon is not during a full moon, but during the First Quarter (half moon) and Last Quarter (half moon). During a full moon, the sun falls directly on the moon's landscape and there are no shadows to help distinguish different features. In May, the half moons will appear on May 10 and May 26. In June, they will appear on June 9 and June 24. The best time to see the rays, however, is during a full moon.

Visit the new Arthur Ross Hall of Meteorites to learn more about the moon. There, you will see different types of moon rocks, learn how craters are formed, and what meteorites can tell us about the origins of the moon, the earth and other planets. Also visit the Hayden Planetarium and see their exhibits on the sun, astronomy, and the planets. The present sky show is *The Drama of the Universe*, which presents some of the most recent facts, theories, and discoveries about the universe.



Lick Observatory, California

Sun	Tue	Wed	Thu	Sat
<p>7 10:30 a.m. and 1:00 p.m. Fossils of Fifth Avenue Tour with Sidney Horenstein. Tickets required. (Sold out.)</p> <p>14 12:45 p.m. American Ceta-cean Society. Rm. 319. Free. 2:00 p.m. New York Shell Club. Rm. 426. Free. 1:00-4:30 p.m. Chinese Poetry and Myth. Storytelling, family art workshops, and a theatrical piece. People Center. Free.</p>	 <p>16 8:00 p.m. Linnaean Society. Rm. 129. Free</p>	<p>10 7:30 p.m. New York Mineralogical Society. People Center. Free. Sunset. Amateur Astronomer Association Star Party. Meet outside Hayden Planetarium. Free. (See article page 4.)</p> <p>17 7:30 p.m. Shake-speare's World is Our World, with Joseph Papp. Auditorium. Free.</p> 	<p>11 7:00 p.m. New York Audubon Society. Education Hall. Free.</p> <p>18 Shakespeare: The Globe and the World opens in Gallery 3. 5:45-9:00 p.m. Members' Reception for Shakespeare: The Globe and the World exhibition. (See article page 3.)</p>	 <p>20 Your July/August issue of Rotunda will be mailed early, telling you more about the Shakespeare exhibition and containing a calendar complete through August.</p>

June 1981

Sun

Mon

Tue

Wed

Thu

Fri

Sat

May 1981

2 11:00 a.m. New York Map Society. Rm. 129. Free
1:00-4:30 p.m. People Center. Folk Dances of Mexico. Folk Arts of Guatemala. Films: Sentinels of Silence, Quetzicoatl



9 2:00 p.m. Amateur Astronomers Association. National Astronomy Day. (See article page 4.)
1:00-4:30 p.m. People Center. Folk Dances of Mexico. Folk Arts of Guatemala. Films: Sentinels of Silence, Quetzicoatl

4 7:00 p.m. Visions of Antiquity: Licit and Illicit. Tickets required. (See article page 6.)

5 Eia Aquard Meteor Shower.

6 2:00 p.m. Introduction to Asian Hall. Gallery Talk. Assemble at first floor information desk. Free.
7:00 p.m. Versions of the Traditional. People Center. Free. (See article page 6.)
7:30 p.m. Dancers from Suriname. Auditorium. Free. (See article page 2.)
7:45 p.m. Amateur Astronomers Association. Ed. Hall.

7 2:00 p.m. The Potlatch of the Northwest Coast Indians. Gallery Talk with P. Santagon. Assemble at first floor information desk. Free.

3 10:30 a.m. and 1:00 p.m. Nature Walk of Inwood Park with Sidney Horenstein. Tickets required. (Sold out.)
2:00 p.m. Forever Young. Award-winning film on old age by Robin Lehman. Auditorium. Free. For information call (212) 873-1300, ext. 559
1:00-4:30 p.m. People Center. See May 2.

New Moon (not visible)

11 7:00 p.m. Visions of Antiquity: Licit and Illicit. Tickets required. (See article page 6.)
7:30 p.m. Animal Behavior Society. Rm. 129. Free.

10 2:00 p.m. High School of Performing Arts Dance Concert. Auditorium. Free. (See article page 4.)
2:00 p.m. New York Shell Club. Rm. 426. Free.
1:00-4:30 p.m. People Center. See May 9.

12 8:00 p.m. The Chimpanzee: Portrait of the Best Known Ape. Lecture with Jane Goodall. Auditorium. Tickets required. (Sold out.)
8:00 p.m. Linnaean Society. Education Hall. Free.

13 2:00 p.m. Arts and Crafts of East Asia. Gallery Talk. Assemble at first floor information desk. Free.
Sunset. Star Party. Free (See article page 4.)
7:30 p.m. The Chimpanzee: Portrait of the Best Known Ape. Lecture with Jane Goodall (sold out).
7:30 p.m. NY Mineralogical Soc. People Center. Free

14 2:00 p.m. Traditional Arts of the Northwest Coast. Gallery Talk with P. Mandel. Assemble at first floor information desk. Free
7:00 p.m. New York Audubon Society. Education Hall. Free.

15

16 1:00-4:30 p.m. People Center. Lectures, dances and films illustrating the folk traditions of Panama

First Quarter (half moon)

18 7:00 p.m. Visions of Antiquity: Licit and Illicit. Tickets required. (See article page 6.)

17 12:45 p.m. American Celiac Society. Rm. 319. Free.
2:00 p.m. New York Paleontological Society. Rm. 426. Free.
1:00-4:30 p.m. People Center. Lectures, dances and films illustrating the folk traditions of Panama

19 5:45-9:00 p.m. Members' Reception for the new Arthur Ross Hall of Meteorites (See article page 3.)
8:00 p.m. New York Entomological Society. Rm. 129. Free

20 2:00 p.m. Arts and Crafts of South Asia. Gallery Talk. Assemble at first floor information desk. Free
7:00 p.m. Versions of the Traditional. People Center. Free. (See article page 6.)
7:00 p.m. African Diaspora Caribbean Expression. Film series. Auditorium. Free. For information call (212) 873-1300, ext. 525.

21 2:00 p.m. Plant Eating Animals. Gallery Talk with R. Aylward. Assemble at first floor information desk. Free

22

23 1:00-4:30 p.m. People Center. Jews in Muslim Lands. Folksongs of Jewish Tradition. Folk Dances of Israel. Hebrew and Yiddish Folksongs.

24 1:00-4:30 p.m. People Center. See May 23.

25

26 8:00 p.m. Linnaean Society. Education Hall. Free
8:00 p.m. Met Grotto: National Speleological Society Rm 129. Free
Last Quarter (half moon)

27 2:00 p.m. Arts and Crafts of Central Asia and Tibet. Gallery Talk with S. Gronewold. Meet at first floor information desk. Free.
7:00 p.m. African Diaspora Caribbean Expression. Film series. Auditorium. Free. For information call (212) 873-1300, ext. 525

28 2:00 p.m. Maritime Peoples: Man and the Sea. Gallery Talk with J. Munoz. Assemble at first floor information desk. Free

29

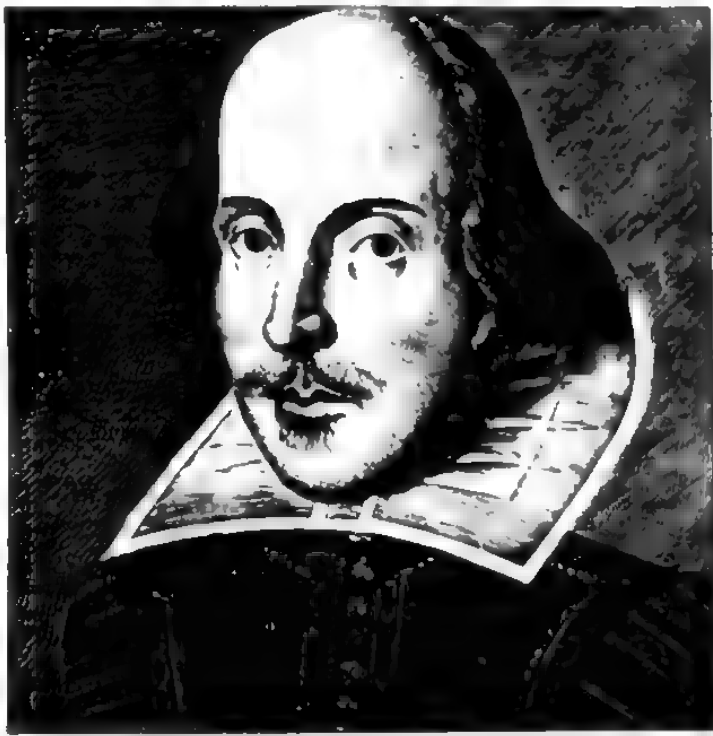
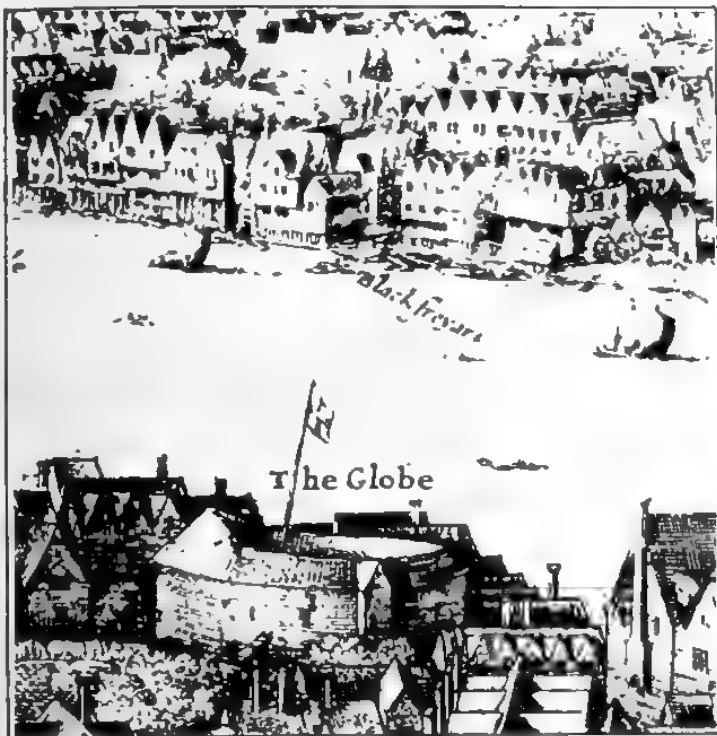
30 1:00-4:30 p.m. People Center. Jews in Muslim Lands. Folksongs of Jewish Tradition. Folk Dances of Israel. Hebrew and Yiddish Folksongs

1:00-4:30 p.m. People Center. See May 30. **31**

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 5, No. 6 Summer 1981



Shakespeare: The Globe and the World

Gallery 3, June 18 — September 20

Shakespeare, like no other writer in history, immortalized his time period through his writing. A collection of Shakespeariana provides a thorough look at the people of Elizabethan England, with all of their concerns and problems. Nowhere is his outlook more apparent than in the extensive collection from the Folger Shakespeare Library in Washington DC. This collection, being shown for the first time outside the walls of the Folger Library, is touring the country and will open Thursday, June 18, in Gallery 3.

Shakespeare: The Globe and the World is designed to bring to life the works of William Shakespeare and the world of Elizabethan England. The visitor will enter Shakespeare's world through a series of graphic environments: rural Stratford, the marketplaces of Elizabethan London, the bookstalls of St. Paul's, the Bankside

theatre district, and the court of Elizabeth I

The historical highlight of the show is the 1623 First Folio, the first collected edition of all but one of Shakespeare's plays. Two Follies are displayed in the exhibition: the famous Presentation Copy from the printer William Jaggard to his patron Augustine Vincent, and the Warwick Castle Folio, one of the finest in existence.

Six mini-theatres will screen film and video clips of famous modern interpretations of six plays. The renowned Adams model of the Globe Theatre will be on display, providing a setting for presentations by guide lecturers. In addition, strolling players will add color to the exhibition, the Museum, and areas around town.

The exhibition, made possible by grants from the National Endowment for the Humanities, Metropolitan Life

Clockwise from upper left: The Bankside Bear-baiting arena, next door to the Globe Playhouse and inadvertently mislabeled (from Hollar's long view of London, 1647); Portrait of Shakespeare from the title page of the 1623 First Folio; Mary, Queen of Scots with Henry Stuart, Lord Darnley (circa 1603); A heron as depicted in Belon's *L'Histoire de la Nature des Oyseaux* (Paris, 1555). Graphics courtesy of the Folger Library

Insurance Company, Exxon Corporation, and the Corporation for Public Broadcasting, will be free to all Museum visitors.

For more information on the Summerfest activities and a treatise on Elizabethan life, see pages 4-6.

Shakespeare

Talks, demonstrations and films relating to the works of the Bard — including a lecture by Tom Stoppard — make up a *Shakespeare Summerfest* to be held at the Museum and nearby locations.

Page 6

The Elizabethan world, with all its quirks and fancies, takes the stage in *Shakespeare's England. Act II, Scene iv*.

Pages 4 and 5

Australian Aborigines

The dance, music and crafts of the Aborigines are the focus of a United States tour by the Aboriginal Artists of Australia.

Page 3

Galapagos

Photographer Tui De Roy Moore, having lived in the Galapagos most of her life, offers her view of the islands in her slide presentation, *Galapagos Almost Eden*.

Page 2

Members' Reception

Members are invited to a special reception with a private viewing of the exhibition *Shakespeare: The Globe and the World*. Thursday, June 18 has been filled, but a limited number of spaces remain for Tuesday, July 28. For more information please call (212) 873-1327.

Galapagos: Almost Eden

Wednesday, July 22, 7:00 p.m., Auditorium

Tui De Roy Moore, a photographer who grew up in the Galapagos Islands, will give a slide presentation entitled *Galapagos: Almost Eden*.

For years, scientists, photographers and tourists alike have found the Galapagos to be a magical paradise and an endless source of discovery. Tui De Roy Moore's family moved to the islands when she was two, and she grew up there taking an early interest in photography.

Living in the Galapagos afforded her the opportunity to explore the natural surroundings in greater depth and detail than any other photographer. Not limited by time constraints, she has been able to record sea lions in battle, albatrosses in courtship display, and the flowering of endemic plants rarely seen by tourists. Her first book, *Galapagos: Islands Lost in Time*, with an introduction by nature writer Peter Matthiessen, was published in 1980.

The program is free to all Museum visitors. Seating will be on a first-come, first-served basis.



Galapagos land iguana

Tales for a Summer Evening

Wednesday, July 29, 5:30-7:30 p.m.

Stories, myths and fables of several cultures will be presented in a Wednesday evening of storytelling at the Museum. Halls of Asian, African, and Native American peoples will serve as the setting for storytellers who will draw upon the oral traditions of these cultures. There will be several concurrent narrations in the different halls, for which a schedule will be available.

Laura Simms will move through the Hall of Asian Peoples telling stories from several of the represented cul-

tures. She will be accompanied by Steven Gorn playing on a bamboo flute. Rosebud Yellow Robe will present the stories of the Lakota Sioux in the Hall of Plains Indians, and Pamela Patrick will use the Hall of Man in Africa to tell creation stories, tales of wisdom, and a "dilemma tale" that requires the audience to provide the ending.

The program is free to all Museum visitors. For more information call (212) 873-1300, ext. 559 or 566.

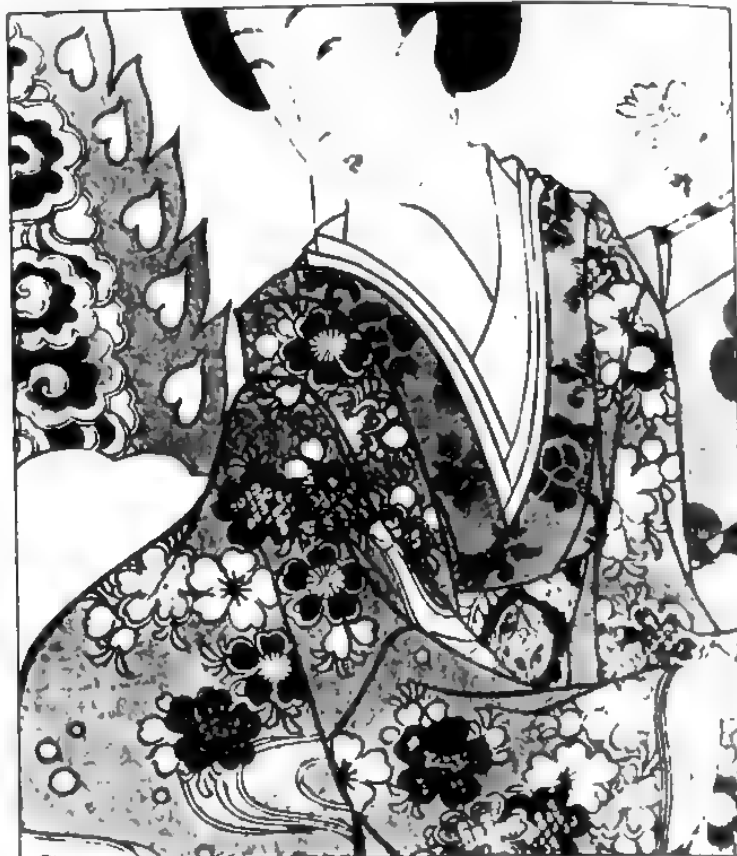
Laura Simms and Steven Gorn



Subtle Beauty

Gallery 77, June 25 — October 1

From Japanese Design, by Frances Blakemore



Dentobi: Shizen no Katachi ("Traditional Beauty: Designs from Nature"), an exhibition of Japanese stencils and printed fabrics from the Tom and Frances Blakemore Collection, will be displayed at the Museum.

The stencils, painstakingly cut from paper, represent one of the most endangered of the Japanese traditional arts. The time-consuming process of cutting a stencil, of transferring the pattern to cloth, and of finally hand-dyeing the fabric, has been replaced to a great extent by machines.

A number of large, hand-dyed textiles, colored predominantly in a deep blue derived from the indigo plant, show the end product of this arduous process; and a collection of costumes represents the use of the patterns in dress. Included are kimonos, short coats, vests, jackets, and pantaloons, as well as a deerskin coat stenciled both inside and out.

Excerpts from the recent Japanese film *Katagami* ("Stencil Art"), shown within

the exhibition, illustrate the detailed process of cutting and preparing the stencils.

The patterns and design motifs, some of which appear abstract, have traditional roots. Derived from poetry, proverbs, observations of nature, and religious and cultural symbols, they have appeared for centuries on ceramics, in metal work, painting and sculpture, and in textiles. The patterns are passed down in books from one generation to the next. Over the years, single motifs have gone through transformations that have left them far removed from the original design. The tortoise, for example, a symbol of longevity, is often represented as a simple hexagonal outline. To the knowing eye, however, this is still immediately identifiable as the tortoise. The pictorial origins of the Japanese written language may in part explain the ease with which these visual relationships are grasped.

The exhibition is free to all Museum visitors.

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 6
Summer 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
James Budenholzer — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1981 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Jules Verne Film Fest

Tuesday-Thursday, July 14-16
6:15-8:30 p.m., Auditorium
Free to Members, \$3.00 for non-members

Tuesday, July 14

6:15-6:45 p.m. *The World of Jules Verne*. Explore the world of Jules Verne in this multi-media show which combines more than four hundred engravings from the original French editions of Verne's works with dramatic readings from his books. The production was created by Philip Wohlsetter.

7:00 p.m. *20,000 Leagues Under the Sea*. (Please use parking lot or lower level Central Park West entrance.) The year is 1868 and Captain Nemo (James Mason) is living in exile at the bottom of the sea in the first submarine. Kirk Douglas and Peter Lorre star as the intruders who have come to trouble his existence.

Wednesday, July 15

6:15-6:45 p.m. *The World of Jules Verne*. (See Tuesday, July 14.)

7:00 p.m. *Journey to the Center of the Earth*. Following the track of a Sixteenth Century alchemist, James Mason and Pat Boone enact a journey into a realm as marvelous and alien as another planet.

Thursday, July 16

6:15-6:45 p.m. *The World of Jules Verne*. (See July 14.)

7:00 p.m. *The Mysterious Island*. (Please use parking lot or lower level Central Park West entrance.) In Jules Verne's imaginative version of Robinson Crusoe, a group of castaways master the hostile environment of a lonely Pacific island, only to find that they are not alone on the island after all! Herbert Lom and Michael Craig star.

Admission: Since the Auditorium will be undergoing renovations this summer, seating will be limited. We have instituted the following ticket policy: Tickets will be distributed on a first-come, first-served basis beginning at 5.45 p.m. outside the Auditorium door. Participating, Donor, and Elected Members may pick up tickets for two adults and for up to four children upon presentation of their Membership cards. Associate Members may pick up two tickets. For the Tuesday and Thursday programs please use the parking lot or lower level Central Park West entrance.



Aboriginal Artists

See box below for details

The Australian Aborigines have lived throughout Australia for 40,000 years. It is believed that they arrived in Australia from Southeast Asia via Indonesia. Since that time, they have evolved into diverse cultures with a rich heritage of art, music, dance, and an oral tradition of stories and myths.

This July New Yorkers will have a unique opportunity to experience the ancient culture of the Australian Aborigines. A troupe of 28 dancers, musicians, and craftsmen from four communities in Northern and

Central Australia will appear in New York as part of a United States tour by the Aboriginal Artists of Australia. Please see box for the schedule of events.

The festival is sponsored by

the Mobil Oil Corporation, National Endowment for the Arts, and the Government of Australia. It is presented by Los Angeles Dance Festival/Orinoco Dance Foundation.

Aboriginal Artists of Australia Schedule of Events

Wednesday, July 22, 6:00 p.m. *Aboriginal Artists in Performance*. Central Park East Meadow (just inside the Fifth Avenue and 99th Street Entrance). Free.

Thursday, July 23, 6:30 p.m. *Aboriginal Artists in Performance*. Creative Time Inc., Art on the Beach series, Landfill (Gate #19 at Chambers and West Street). Free.

Thursday, July 23, 8:00 p.m. *The Land and The Dreaming - Aboriginal Mythology*. Lecture with Lance Bennett. The C.G. Jung Foundation, 28 East 39th Street. Admission \$10.00 (\$7.00 for Foundation Members and students). Call (212) 697-6430 for ticket information.

Friday, July 24, 7:30 p.m. *Aboriginal Life: A Film Retrospective*, with Ian Dunlop. American Museum of Natural History. \$1.50 for Members, \$3.50 for non-members. See coupon this page.



The First Australians

Friday, July 24,
7:30 p.m., Auditorium

Aborigines have survived in one of the world's harshest environments.

At the end of the program, Mr. Dunlop and some of the members of the Aboriginal

troupe will answer questions from the audience.

Tickets are \$1.50 for Members, \$3.50 for non-members. To order tickets please use the adjacent coupon.

A special Members' program, *Aboriginal Life: A Film Retrospective*, will be held in conjunction with the tour by the Aboriginal Artists of Australia. The noted ethnographic filmmaker, Ian Dunlop, will introduce and narrate the program. He will present a retrospective look at ethnographic filmmaking in Australia from 1898 to the present. The program will include some of the earliest visual materials ever taken of the Australian Aborigines.

Mr. Dunlop will also present excerpts from his own films, *Desert People* and *People of Western Australia*. Both films were shot in the remote deserts of Australia and have provided many people with their first look at how the

I would like to order tickets to *Aboriginal Life: A Film Retrospective*. Participating, Donor, and Elected Members may purchase up to four tickets at the Member's Price of \$1.50. Associate Members may purchase one. All other tickets are \$3.50.

Members' tickets at \$1.50 each \$
Non-member tickets at \$3.50 each \$
Total payment enclosed \$

Name

Address

City

State

Zip

Daytime phone

Membership Category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Aboriginal Life*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Ticketing Policy: All ticket requests received before June 30, 1981 will be treated on an equal basis. Tickets will be mailed out by July 6. After June 30, 1981, please call (212) 873-1327 for ticket availability.

Shakespeare's England: Act II, Scene iv

William Shakespeare was born 417 years ago (April 23, 1564) and did most of his writing during the Elizabethan age of England: a time that was similar to the present in many respects, but which differed remarkably in others. What were the concerns of people in his day? What fascinated them, and of what were they afraid? What was their view of the world, and their receptivity to scientific and non-religious thought?

The following is a collection of Elizabethiana to supplement the exhibition *Shakespeare: The Globe and the World* (see article page 1)

Science and Medicine

*Is it not strange that sheep's guts should
Hale souls, out of men's bodies?*

— Much Ado About Nothing

Shakespeare lived in a time when two of the noble sciences were astrology, the divining of people's destinies through observation of the heavens; and alchemy, the quest for a chemical transmutation of baser metals to gold. Superstitions prevailed in this period and guided people in their daily lives, and evil was envisioned in tangible forms such as witches and devils. In addition, people believed that the more exotic a plant or an animal, the greater its medicinal uses

There are also medicinal properties in camels, for by reason hee is of a hot and dry temperment, if a man infected with poyson be put into the warme belly of a camell newly slaine, it looseth the power of the poyson, and giveth strength to the natural parts of the body. The fat taken out of the bunch [intestines] and perfumed, cureth the Hemorrhoids, and the braine dried and drunk with vinegar, helpeth the falling evil. The gall, if it be laide to the eye-browes and forehead, sod in three cups of the best hony, it cureth the dimmes of the eyes and avoydeth the flesh that groweth in them: and if the haire of a Camels taile be wounde together like a string, and tyed to the left arme (Pliny affirmeth) they will deliver one from a quartan Ague [recurring fever]

Yet this period also saw the rebirth of scientific reasoning. Questions that broke into the sanctuary of religious belief recurred with greater frequency, and great men struggled to teach their new discoveries to unwilling minds.

Just twenty-one years before Shakespeare's birth, Nicolas Copernicus published his treatise *On the Revolutions of the Heavenly Spheres* (1543). In attempting to salvage the Ptolemaic solar system of circular orbits, he moved the focus of the solar system from the earth to the sun. This simplified the overly complicated Ptolemaic system, but disturbed the notion that the universe revolved around mankind. His ideas met with considerable resistance for several generations.

Galileo Galilei, born the same year as Shakespeare (1564), was instrumental in the gradual acceptance of the Copernican theories. His observations with the telescope supported these new views. His other experiments loosened the foundations of many great misconceptions, particularly concerning the physical laws of Nature, and helped ready the world for change. Yet even he was slapped down by the church when he stepped too hard on theological toes.

In the same year that Shakespeare died (1616), William Harvey announced his momentous discovery of the circulation of the blood. Previously physicians believed that blood simply sloshed back and forth in the body. Harvey proved that the heart regulated flow in one direction, and that the veins had valved chambers allowing movement in that direction only.

Twenty-six years later, in the year that Galileo died (1642), Isaac Newton was born. His experience with an apple tree in years to come would rival Adam and Eve's in importance. This, of course, was his discovery of the laws of gravity.

The New World

*Be not afraid: the isle is full of noises,
Sounds and sweet airs, that give delight, and hurt not.*

— The Tempest

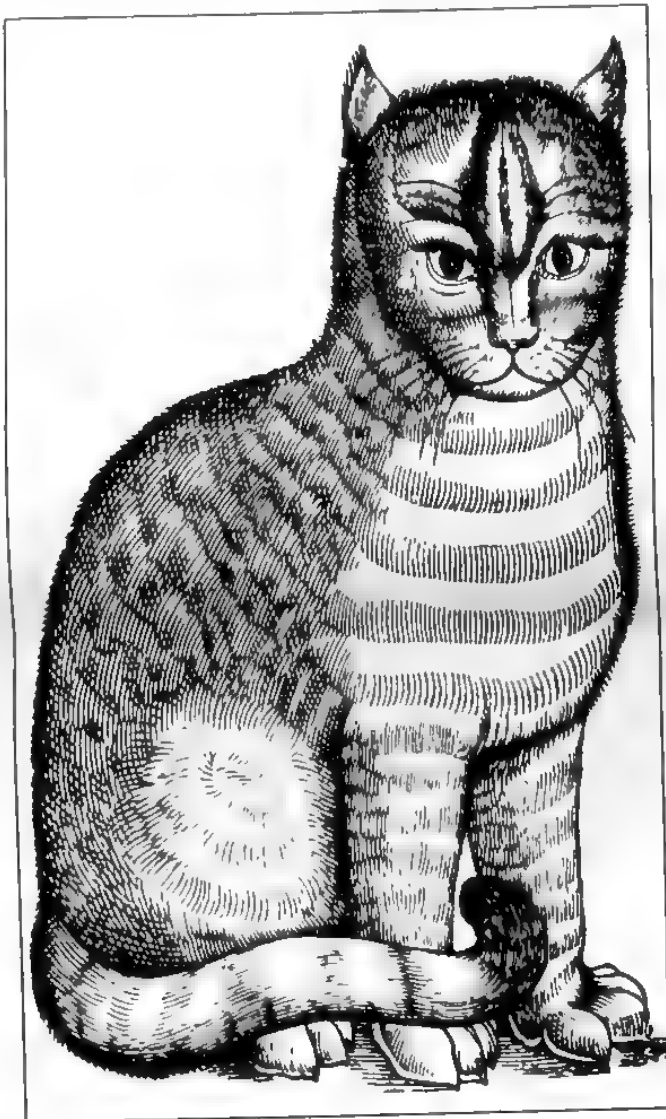
We live today in a generation that watched the earth rise over the moon on our television sets. We have trouble imagining the immense excitement that accompanied the discovery of the New World. Sending Raleigh, Cabot, or Drake to the Americas or to circumnavigate the globe was like sending them to another universe. They would be gone for years, often well beyond their planned return, with no communication whatsoever. Finally they would appear

with millions in gold and silver (usually pirated from the Spanish) and tell of wonders both real and imaginary. Many Elizabethans believed there were regions of South America where children played with nuggets of gold the same way theirs played with pebbles.

In the ships' holds the explorers brought back plants and animals that had never been seen before. Many were assigned strange magical qualities: books expounded on the medicinal effects of sassafras, which was thought to cure syphilis; and of tobacco, which was thought to cure everything. One proponent of tobacco smoked all of his life. On his death bed, dying from cancer of the mouth, he smoked a cigarette, sure to the end that it would stave off the inevitable.

Other curiosities included the tomato, which was brought back as a non-edible, decorative plant, the potato, the long pepper, the giant sunflower, maple syrup, the turkey, the armadillo, the buffalo, corn, nasturtium, the Michaelmas daisy, the evening primrose, extraordinary quantities of furs, and, of course, Indians.

Indians were a great wonder. They were 'savages' from a new world who looked different, spoke unknown languages, and worshipped different gods. They were brought back to England for a multitude of



purposes, ranging from decoration and social status to slavery. One of the reasons that Squanto, the Indian who acted as translator for the Pilgrims, was fluent in English when the Pilgrims landed, was that he had previously been captured by a slaver and taken to England. He befriended various ship captains and talked his way back to America, just one year before the Pilgrims landed.

Pocohantas, an Indian princess, married an Englishman. The ramifications of the interracial marriage were overlooked for curiosity's sake, and she was received everywhere with all of the ceremony due a princess. Several taverns she visited went so far as to hang her picture over the door and even change their names to capitalize on her visits.

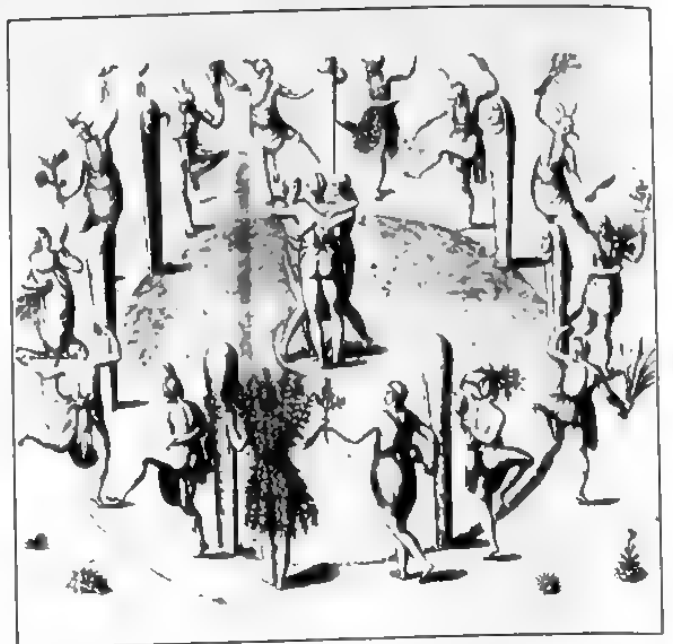
Elizabethan Bestiary

Here comes a pair of very strange beasts.

— As You Like It

The number of animals that were believed to exist during Elizabethan times was not that considerable. The variety of them, however, and the often amusing misconceptions that surrounded them, are fascinating.

Cats were an accepted house pet, yet it was widely believed that the breath and smell of them posed a great danger to human beings. Those who slept with



cats fell into "fever hec ticks and consumption," and the "haire being eaten unawares would stoppeth the artery and causeth suffocation."

Medicine, as always, was in awe of any creature that could exercise such power over people. In a suitably retaliatory measure the magic of the cat was captured and put to use. For pain and blindness in the eye it was suggested that one should take the head of an all-black cat, burn it down to powder, and blow it into the pained eye three times daily. No record is left of its effectiveness.

One of the classic misconceptions was the Gorgon. Although there are no surviving records of actual encounters, this horrible beast was attributed to the seldom visited regions of Africa.

When frightened, it was believed, the Gorgon would stand the hairs of its head on end and "sendeth forth of his throat a certain sharpe and horrible breath, which infecteth and poysoneth the air above his head, so that all living creatures which draw in the breath of that aire are greivously afflicted thereby, loosing both voyce and sight, they fall into leathall and deadly convulsions."

Scholars later proved, through extrapolation, that it killed not with its breath, but with its eyes: it had to raise its hair on end to uncover them.

The rhinoceros, being a one-horned beast, picked up many of the attributes of the unicorn. "Above all other creatures they love Virgins," it was said, "and that unto them they will come, be they never so wilde, and fall asleep before them, so being asleep they are easily taken and carried away."

The cockatrice was perhaps the most remarkable animal in the Elizabethan zoo. It was born from a leathery, spherical egg laid by a cock too old to father children. This egg, believed to be an accumulation of useless sperm, was then abandoned and raised by a toad. As curious as this seems, there are enough descriptions of these animals to confirm their existence, although their origins may be somewhat different. Their description sounds something like that of an iguana.

The elephant did then, and always will, inspire awe in people:

There is no creature among al the Beasts of the world which hath so great and ample demonstration of the power and wisdom of almighty God as the Elephant . . . Among all, the Indian Elephants are greatest, strongest and tallest. They be also bred in Africa, in Lybia, much greater than a Nysaeen Horse, and yet every way inferior to the Indian; for which cause, if an Affrican Elephant do but see an Indian, he trembleth, and laboureth by all meanes to get out of his sight, being guilty of their owne weaknesse.

The African elephant is in reality larger than the Indian. These accounts are based on a North African species which was, in fact, smaller than the Indian. The larger African, living further inland, had not yet been seen by Europeans.

Amusements

How many times shall Caesar bleed in sport?

— Julius Caesar

Pastimes of the Elizabethan age have a number of similarities to those of today. The games played then are mostly recognizable — chess, backgammon, various card games. Skills that are hobbies today, such as needlepoint, knitting or quilting, were then full-fledged

professions. Embroidery, in fact, was a man's trade with a guild of its own. Young girls' samplers did not appear until the end of Shakespeare's lifetime.

Sports were competitive, often violent. There were few rules in football (soccer), a minimum of penalized fouls, no real boundaries, and usually not even a set goal. Whole towns and villages challenged one another. (Some rivalries became annual occurrences that continue in England today.)

One sport was known as *knappen* (a Welsh word meaning "to knock"). It was played with a ball that just fit into one's hand. The ball was made slippery with tallow and put in the middle of a field halfway between two competing towns. The players, with prudently trimmed hair and beards, would play stripped to the waist and usually barefoot. Some, however, would ride horses polo-style, carrying cudgels three-and-a-half-feet long. The object of the game was simply to plant the ball within one's own village. The fields could extend for several miles and up to two thousand players might take part.

Injuries are not well documented, although broken heads and broken necks were fairly commonplace.

A writer known as Honest William wrote a lord of the time,

Was much delighted to hear that his lordship recently visited the bear garden . . . There one may hear the shouting of men, the barking of dogs, the growling of the bears, and the bellowing of the bulls, mixed in a wild but natural harmony. This appears to the writer a picture of the world, for "All the world is but a bear-baiting."

Not all viewed the baiting as one of the cultural heights of the period, however. Particular objections were made to the crowd it attracted.

The swaggenng Roarer, the cunning Cheater, the rotten Bawd, the swearing Drunkard, and the bloudy Butcher have their Rendevous here, and are of chiefe place and respect. There are as many civil religious men here, as there are Saints in Hell.

Music

*I have a reasonable good ear in music: let
Us have the tongs and the bones*

— A Midsummer Night's Dream

As ugly as some entertainment got, Shakespeare's lifetime was also one of the greatest musical ages in English history. Not only were composers enjoying great success, but music was considered as much a part of life as rabbit pie. Every educated person could play an instrument or carry their part in a song. No social occasion was ever without music. Nobles routinely kept musicians on their household staff, usually as a small orchestra to play during meals from the minstrel gallery above the dining room, and to provide music for the larger occasions.

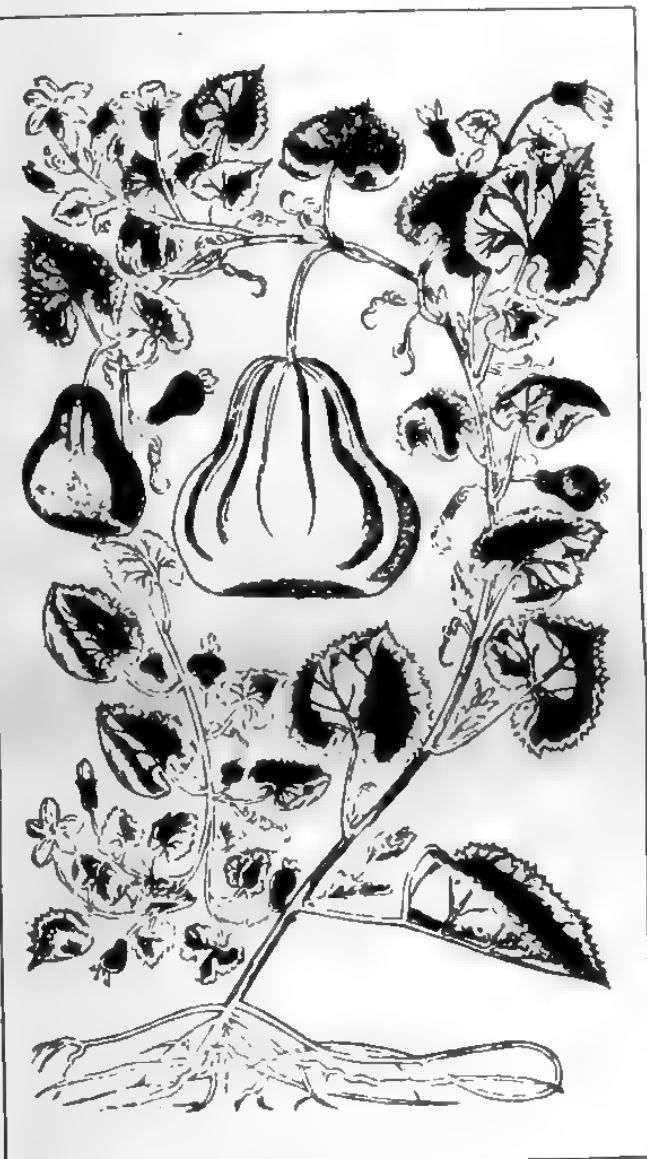
Barbershops kept a rack of musical instruments instead of magazines for their waiting customers.

Sir Francis Drake, in order to impress the people of the world with the greatness of England, had a small but good orchestra included in the crew of his ship, the *Golden Hind*. They added majesty to disembarkations, to meetings with foreign captains or chiefs, and to flag planting ceremonies in the New World.

This may not have been so strange an idea after all. The inhabitants of the New World were captivated by the Elizabethan music:

We had a youth in our company that could play upon a gittern [a wire-strung instrument similar to a guitar], in whose homely music [the Indians] took great delight and would give him many things, as tobacco, tobacco-pipes, snake's skins of six-foot long which they use for girdles, fawns' skins and such-like. And danced twenty in a ring, and the gittern in the midst of them, using many savage gestures, singing Jo, Ja, Jo, Ja, Jo, Jo: him that first brake the ring the rest would knock and cry out upon.

Common instruments were the virginal (a small forerunner of the piano that was portable and could be placed on any table); the viol, lute and gittern; the recorder, flute, pipes and other wind instruments; the organ, the hautboy (oboe), the sack-but (trombone), the trumpet, and the drum.



Bearbaiting

Of all the violent diversions and amusements, the most notable was animal baiting. Animals — sometimes bulls but usually bears — would be chained in the middle of an arena, and a pack of dogs would be turned loose on them. One could pay a penny to sit and watch and have the option of betting on one of the dogs. The first dog to get a good hold on the bear (especially if drew blood) was declared the winner. Good bears were baited over and over again for years. The great ones — with names like Blind Bess and Ned — drew crowds the way a great matador or heavyweight champion might today.

Accounts tell of angered animals turning on their handlers, their feeders, or their guards. On one occasion a crowd of people gathered and watched a man mauled, torn asunder and partially eaten. When the show was over, in the fury of revenge, the crowd set upon and killed the bear. Usually in such cases, the owners arrived in time, separated the bear from the maddened crowd, and arranged to have the bear baited to death. Enough time was left, of course, for advance publicity. Writers of the time speculated that some of these maulings were not accidents, but fabrications and murders for promotional purposes.

The sport was widely accepted as good, clean fun. Queen Elizabeth I, on more than one occasion, held audiences at the Bear Gardens, just as a queen might today at the opera.



Costume

*I think he bought his doublet in Italy,
His round hose in France, his bonnet
In Germany, and his behavior everywhere*

— The Merchant of Venice

Fashion was strikingly influenced by trade with the East and the discovery of the New World. The influx of silks and cottons from Asia, furs from America, as well as valuable baubles and trinkets, contributed to extraordinary costumes and lavish displays of wealth.

The characteristic feature of dress, both male and female, was the ruff, an elaborate piece of neckwear. It varied in size and design — sometimes standing straight up from the shoulders like a sculpted niche, sometimes extending out like a plate. It was usually stiffened with starch, and had a matching pair of sleeve cuffs. Late in Shakespeare's life, the ruff was gradually replaced by various types of falling bands or collars — evidence that the Puritan movement toward simplicity was gathering momentum.

Male costume was for the most part form-fitting. The lines of the body were closely followed, allowing for a freedom of movement. The standard upper garment was the doublet, made of rich imported materials, often lavishly embroidered and slashed to reveal the contrasting color and fabric of the lining. During Shakespeare's time men of fashion tended toward a peascod doublet, which projected above the abdomen and down into the groin. The breeches and hose varied widely, and were often stuffed to fantastic proportions.

The dress for the Elizabethan lady, on the other hand, was not form-fitting in the least. It was stiff and stately, difficult to maneuver, with a tight bodice and an enormous farthingale (a word which referred to hoops of other supporting structure, but was used to mean an entire 'hoop skirt' garment). The farthingale was the outstanding fashion of the period. The early Spanish variety was plain and conical. The more common French type extended outward at the hips. For ease in sitting, some (but not all) were puffed out only at the sides.

The upper garment was often lengthened in front and drawn in extremely tight to make the waist look long and slender. Married women wore full ruffs, maidens open ruffs and low necklines. Breasts, no matter what their size, were forced up and out to look like a pigeon's breast. Padded sleeves frequently added contrast to the wasp-like waist.

Rich jewels, elaborate hairstyles (the Pompadour, stacking the hair on the head like a bee's nest, came into fashion at this time), dainty shoes, and expensive gloves completed the costume.

Height was also considered a sign of great beauty. For this reason it became fashionable to wear tall platform shoes — often as high as twelve inches — underneath long flowing gowns.

A woman who appeared long, slender and lovely — with the waist of a wasp and the breast of a pigeon, bedecked in thirty pounds of jewels and clothing — might not live to a ripe old age, but was an object of envy and model dress for all.

— Stanton G. Orser

Shakespeare Summerfest

The Shakespeare Summerfest, to supplement the exhibition *Shakespeare: The Globe and the World*, offers a variety of talks, demonstrations, and films on subjects related to the works of the Bard. **Note that some events will be held outside of the Museum.** For information on specific programs call the Summerfest at (212) 873-1300, ext. 227.

The Shakespeare Summerfest has been made possible with support from the National Endowment for the Humanities.

Shakespeare and the World Events

Saturday, June 20, 1:00 p.m. — *Shakespeare and the Afro-American Community*. Talks with staged readings from *Othello*. Museum Auditorium. Free.

Saturday, July 11, 1:00 p.m. — *Shakespeare in the Hispanic World*. Talks with dramatizations in Spanish and English. Museum People Center. Free.

Saturday, July 18, 1:00 p.m. — *The Greeks Meet the Elizabethan*. A bilingual program. Museum People Center. Free.

Saturday, July 25, 1:00 p.m. — *Shakespeare's Germany: Excerpts from Plays, Poetry and Music*. Museum People Center. Free.

Saturday, August 1, 1:00 p.m. — *Shakespeare in Japan*. Talks with readings and a showing of *Throne of Blood* (1957, Japan), produced, directed and screenplay by Akira Kurosawa. Museum People Center. Free.

Saturday, August 8, 1:00 p.m. — *Shakespeare and the Armenian Theatre*. Talks with readings and dramatizations in two languages. Museum People Center. Free.

Saturday, August 22, 1:00 p.m. — *Shakespeare in France*. A bilingual program of talks with readings from French poets and translations of Shakespeare. Museum People Center. Free.

Saturday, September 5, 1:00 p.m. — *The Many Faces of Love: Shakespeare's Italy*. Talks with readings and scenes from *Romeo and Juliet*, *The Merchant of Venice* and *Othello*, with music and arias from Verdi and other operatic composers. Museum People Center. Free.

Saturday, September 12, 1:00 p.m. — *Shakespeare in Russia: Excerpts from Poetry, Fiction and Music*. Museum People Center. Free.

Sunday, September 13, 1:00 p.m. — *Shakespeare in the Yiddish Theatre*. Talks with readings and demonstrations. Museum People Center. Free.

Friday, September 18, 8:00 p.m. — *Shakespeare on the Turkish Stage*. Talks with bilingual demonstrations. United Nations Auditorium. Free.

Saturday, September 19, 1:00 p.m. — *Shakespeare on the Turkish Stage*. A repeat of 9/18 program. Museum People Center. Free.

Shakespearean Theatre and Culture Talks

Wednesday, June 17, 7:30 p.m. — *Shakespeare's World is Our World*. Talk by Tom Stoppard. Auditorium. (Free tickets will be distributed on the evening of the event at the second floor information desk starting at 5:15 p.m.)

Sunday, June 21, 1:00 and 3:00 p.m. — *Lear's Shadow*. Scenes from *King Lear* performed by the Post Theatre

Company, with a talk by Stefan Rudnicki. Museum People Center. Free.

Monday, June 22, 7:30 p.m. — *Acting Shakespeare*. Talk by Bertram Joseph, with readings by Carole Shelley and Barry Boys. Museum Auditorium. Free. (Use lower level Central Park West entrance.)

Saturday, June 27, 3:00 p.m. — *Lecture/Demonstration in Potter's Field Acting Technique*. Featuring Michael Moriarty and members of the Potter's Field Theatre Company. New Jersey Shakespeare Festival, Madison, NJ, Bowne Theatre. Free.

Wednesday, July 8, 4:30 p.m. — *Shakespeare's Histories*. Talk by Charles A. Hallett. American Shakespeare Theatre, Stratford, CT. Free.

Saturday, July 11, 3:00 p.m. — *Violence in Shakespeare*. Talk with demonstration by Paul Barry and members of the New Jersey Shakespeare Festival Company. New Jersey Shakespeare Festival, Madison, NJ, Bowne Theatre. Free.

Wednesday, July 15, 4:30 p.m. — *Shakespeare: The Literate Actor*. Talk by Bernard Beckerman. American Shakespeare Theatre, Stratford, CT. Free.

Wednesday, July 15, 7:00 p.m. — *A Lover and His Lass: Dances from Shakespeare's Time*, with Bhala Jones and the Ananda Dancers. Dance based on existing Sixteenth Century dance manuals. Audience participation will be invited. Museum Education Hall. Free.

Tuesday, July 21, 7:00 p.m. — *Dances for a Winter's Night*, with Bhala Jones and Roberto Garcia. Selected Sixteenth Century dances connected by quotations from dance manuals and other treatises of the period. Narrative discusses manners, morals, and the often humorous insights dance gives us into Renaissance life. Museum Edu-

cation Hall. (Use lower level Central Park West.) Free.

Saturday, July 25, 3:00 p.m. — *Designing Costumes for Shakespeare*. Talk with slides by Carrie F. Robbins. New Jersey Shakespeare Festival, Madison, NJ, Hall of Sciences. Free.

Wednesday, July 29, 7:00 p.m. — *The Book in Shakespeare's Age*. Talk with slides by Daniel Traister. Museum People Center. Free. (This program will include simultaneous interpretation for the deaf and hearing-impaired. This service has been made possible by a grant from the National Endowment for the Humanities to a consortium of Metropolitan-Area Museums.)

Saturday, August 8, 10:00 a.m. — *Realizing Othello: The Rivalry of Images*. Talk by Martin Meisel. American Shakespeare Theatre, Stratford, CT. Call for reservations, (203) 378-7321 or (212) 966-3900. Free.

August 12th, Wed., 4:30 p.m. — *Big O, Little o: The Language of Othello's Mind*. Talk by Naomi Liebler. American Shakespeare Theatre, Stratford, CT. Free.

Saturday, August 22, 3:00 p.m. — *Feuds and Revenge in Shakespeare*. Talk by Harry Keyishian. New Jersey Shakespeare Festival, Madison, NJ, Hall of Sciences. Free.

Saturday, August 29, 3:00 p.m. — *On Directing Shakespeare for the Modern Stage*. Talk by Christopher Martin. New Jersey Shakespeare Festival, Madison, NJ, Hall of Sciences. Free.

Wednesday, September 2, 4:30 p.m. — *Othello and Motiveless Malignity*. Talk by Edward W. Taylor. American Shakespeare Theatre, Stratford, CT. Free.

Wednesday, September 2, 7:00 p.m. — *Shakespearean Weaponry and Duelling*. Talk with demonstration by Steven

Andresen and Gary A. Morabito. Museum Education Hall. Free.

Thursday, September 3, 8:00 p.m. — *Shakespeare: The Literate Actor*. Talk by Bernard Beckerman. Hunter College, CUNY. Hunter Playhouse Free.

Thursday, September 10, 8:00 p.m. — *"In Sweet Music Is Such Art": Songs in Shakespeare's Plays*. Talk with demonstration, Russell Oberlin, and Gerald M. Pinciss. Hunter College, CUNY. Hunter Playhouse Free.

Tuesday, September 15, 6:00 p.m. — *Acting Shakespeare: By and for Americans*. Talk with demonstrations. New School Auditorium. Free.

Thursday, September 17, 8:00 p.m. — *Looking for Shakespeare*. A talk by Samuel Schoenbaum (author of *Shakespeare: The Globe and the World*). Hunter College, CUNY. Hunter Playhouse. Free.

Shakespearean Film Series

Thursday, July 2, 1:30 and 6:00 p.m. — *Henry V* (1944, Great Britain). Produced, directed by and starring Laurence Olivier. Fordham University at Lincoln Center, Pope Auditorium. Free.

Thursday, July 9, 1:30 and 6:00 p.m. — *Romeo and Juliet* (1968, Great Britain/Italy). Directed by Franco Zeffirelli. Fordham University at Lincoln Center, Pope Auditorium. Free.

Thursday, July 16, 6:00 p.m. — *Hamlet* (1948, Great Britain). Produced, directed by and starring Laurence Olivier. Fordham University at Lincoln Center, Pope Auditorium. Free.

Thursday, July 23, 1:30 and 6:00 p.m. — *A Midsummer Night's Dream* (1935, USA). Directed by Max Reinhardt, starring James Cagney and Mickey Rooney. Fordham University at Lincoln Center, Pope Auditorium. Free.

Thursday, July 30, 1:30 and 6:00 p.m. — *King Lear* (1970, Great Britain/Denmark). Directed by Peter Brook, starring Paul Scofield. Fordham University at Lincoln Center, Pope Auditorium. Free.

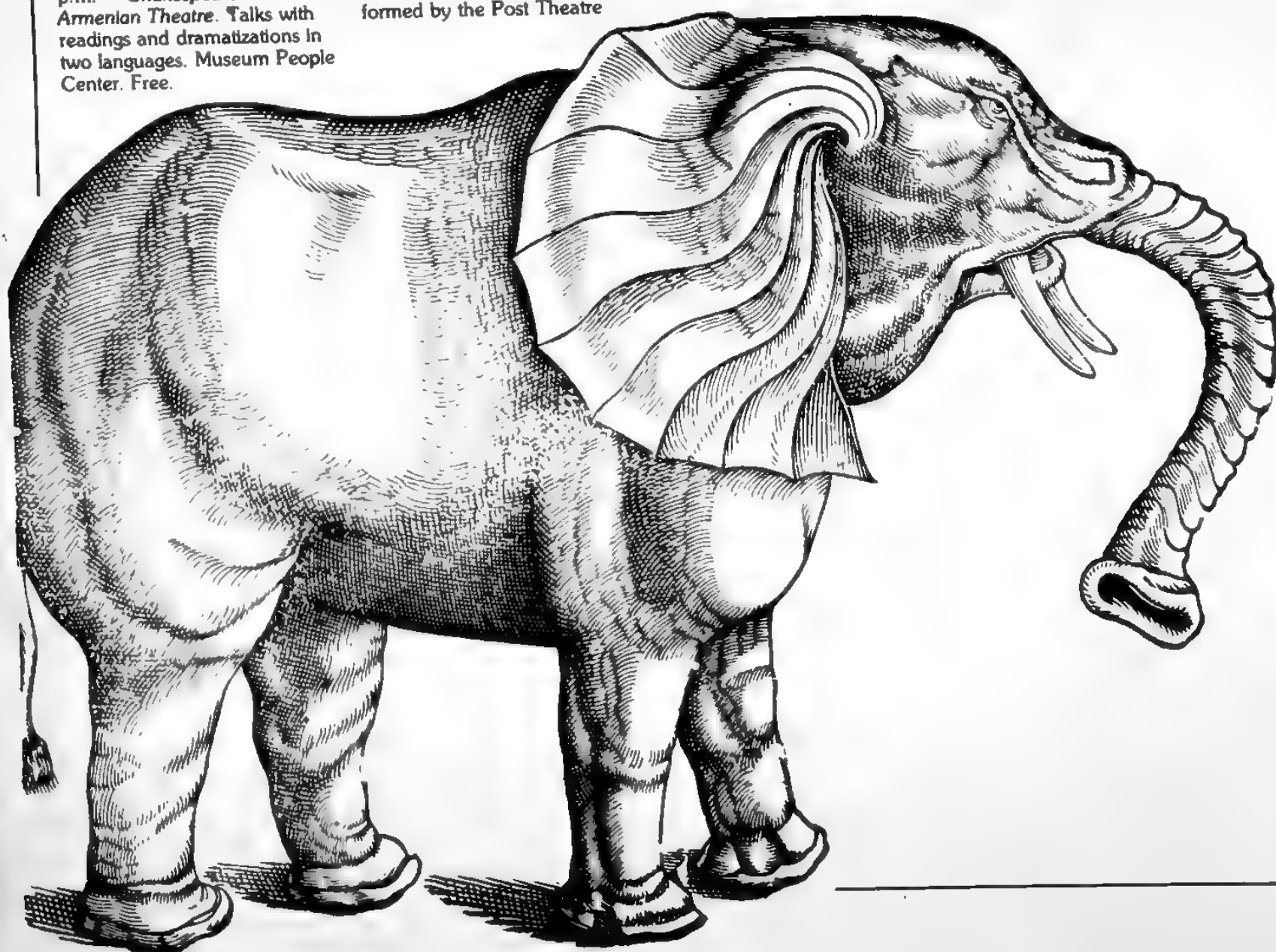
Thursday, August 6, 1:30 and 6:00 p.m. — *Othello* (1956, USSR). Directed by Sergei Yutkevich. Fordham University at Lincoln Center, Pope Auditorium. Free.

In addition to the Shakespeare Summerfest, a great number of Shakespearean activities are planned in the Tri-State area.

The Delacorte Theater plans two productions this summer — one of *The Tempest* with Raul Julia, and one of *Henry IV, Part I*. For information call (212) 535-5630.

WNET/Thirteen will show the BBC/Time-Life series throughout the summer. For specific times consult your television listing.

For a complete listing of local Shakespeare scheduling call (212) 873-1300, ext. 227.



Museum Notes

Special Exhibitions

The Arthur Ross Hall of Meteorites. The Museum's newest permanent exhibition hall, featuring Ahnighito, the largest meteorite "in captivity," as well as many smaller ones and assorted moon rocks.

The Gardner D. Stout Hall of Asian Peoples. Contains over three thousand works of art and artifacts, on display in both chronological and ethnological order.

Shakespeare: The Globe and the World. Through September 20 in Gallery 3. A collection of Shakespeariana from the Folger Library in

Washington D.C. (For Members' reception July 28 call (212) 873-1327)

Traditional Beauty: Designs in Nature. June 25 through October 1 in Gallery 77. A sampling of Japanese patterns and stencils from the Tom and Frances Blakemore Collection. (See article page 2.)

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented in

the People Center weekends from 1:00 to 4:30 p.m. Refer to the full-page calendar for specific events

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. In June, the Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m. In July and August, the Center is open Tuesday through Saturday, 10:30 a.m. to 12:30 p.m., and 1:30 to 4:30 p.m. Closed July 4, 1981

Museum Highlights Tours. For the new Museum visitor as well as the veteran

Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

phenomena such as the stars of the season, comets, and meteors.

Sky show times
Weekdays: 1:30 and 3:30 p.m.
Weekends: hourly, 1:00 through 4:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.00 for adults, \$1.00 for children. For non-member prices, please call 873-8828

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show

Planetarium Events

The Drama of the Universe. This sky show at the Hayden Planetarium presents some of the most recent facts, theories, and astronomical discoveries. In addition, this series of short 'acts' will explore astronomical

An artist's conception of Saturn from its moon, Rhea. In celebration of National Space Week (July 13-20), the American Museum - Hayden Planetarium will offer a lecture on Monday, July 13, by Ben Bova, Executive Editor of *Omni* magazine. On Tuesday, July 14, there will be a reception followed by a panel discussion. Both the lecture and panel will take place in the Planetarium Sky Theater, and limited tickets will be available on a first-come, first-served basis. For more information please call (212) 873-1300, ext. 511

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays. 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

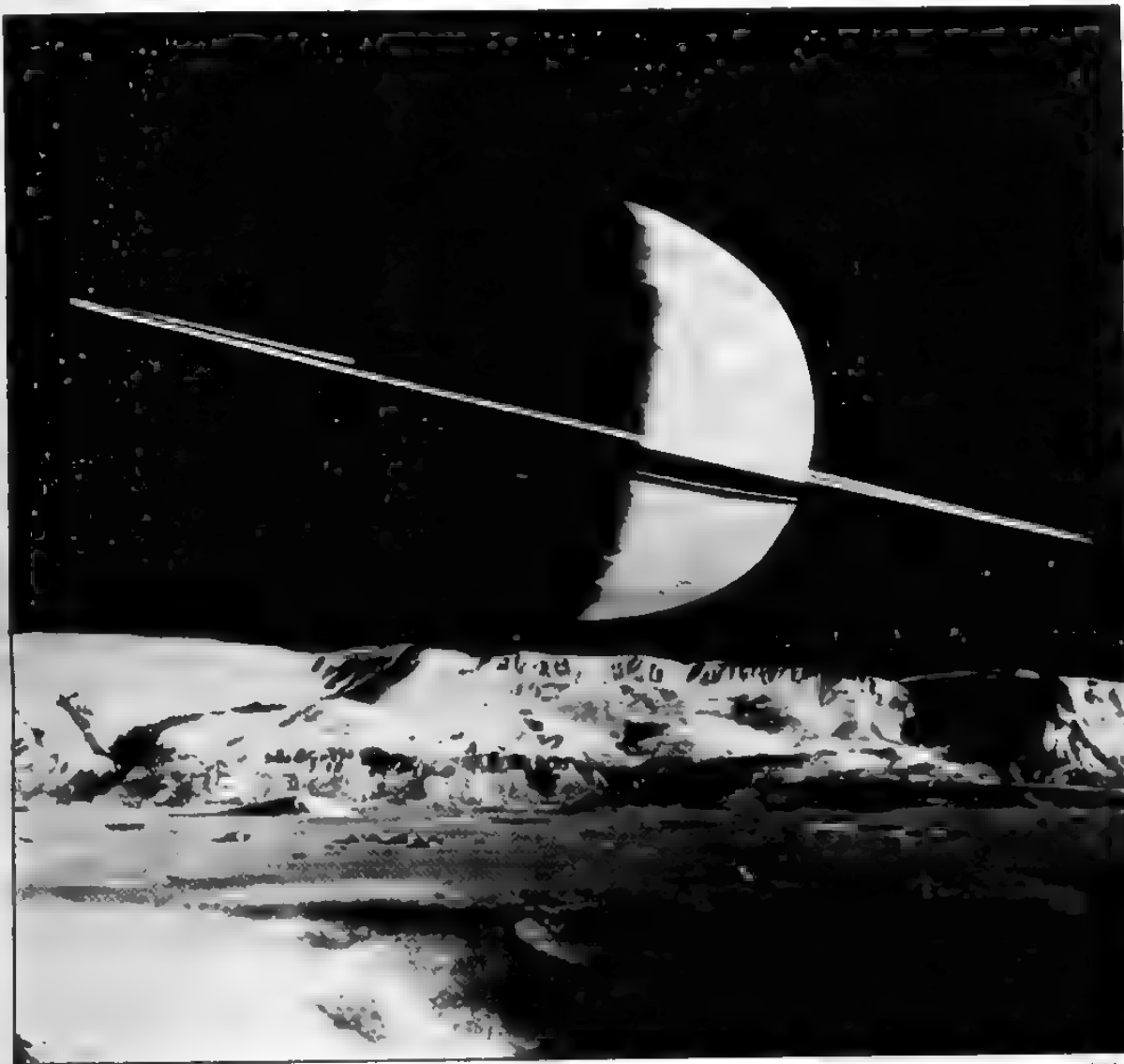
Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$3.75 for cars, \$5.00 for buses. Parking is limited.

Museum Research Stations. Museum Members have visiting privileges at two research stations. If you are planning a visit, write ahead for details

Archbold Biological Station, Route 2, Box 180, Lake Placid, Florida, 33852

Southwestern Research Station, Portal, Arizona, 85632



NASA

Call for Volunteers

Volunteers are needed to conduct a major survey of visitors in the Museum. Beginning in July, a random sampling of visitors will be given a questionnaire to complete, asking information about who they are, their expectations upon entering the Museum, and their reactions on leaving.

Results of the survey will be used to evaluate current directions in programming and exhibition, and the adequacy of facilities.

As a result of the last survey, conducted in 1974-75, communication to both Members and visitors was reorganized. In addition, a number of touring exhibitions and small temporary exhibits were planned to encourage greater local appeal.

The work is easy and enjoyable. Volunteers will be responsible for persuading every Nth visitor (a number to be determined on each survey day) to fill out the written questionnaire. It is important for statistical purposes that the formula be followed precisely: no matter who the designated visitor, that person must be approached. Visitor response to the last survey was extremely positive.

The hours would be sporadic, not regular. While it is hoped that those who start the survey will be able to commit some time throughout the six months, anyone interested should call Miriam Johnson, Coordinator of Volunteers, at (212) 873-1300, ext. 538 or 472.



June

14

Sunday
12:45 p.m. *American Ceta-
cean Society*. Rm. 319. Free
2:00 p.m. *New York Shell
Club*. Rm. 426. Free.

16

Tuesday
8:00 p.m. *Linnaean Society*
Rm. 129. Free

17

Wednesday
7:30 p.m. *Shakespeare's
World Is Our World*. Lecture
with Joseph Papp. Au-
ditorium. Free.

Full Moon

18

Thursday
*Shakespeare: The Globe and
the World* opens. (See article
page 1.)
6:00-9:00 p.m. *Members'
Reception for Shake-
speare: The Globe and the
World*. Free. Reservations re-
quired. For information call
(212) 873-1327

20

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

21

Sunday
2:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

Summer Solstice Summer
begins at 6:45 a.m. EDT

22

Monday
7:30 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

23

Tuesday
8:00 p.m. *Met Grotto; Na-
tional Speleological Society*
Rm. 129. Free.
Discovery Tour leaves for
Western Europe

24

Wednesday
7:30 p.m. *Lapidary and Gem
Society* People Center. Free

Last Quarter (half moon)

25

Thursday
*Traditional Beauty. Designs in
Nature* opens. (See article
page 2.)

26

Friday
Discovery Tour leaves for
Alaska.

July

1

Wednesday
New Moon (not visible)

6

Monday
Museum Shop closed for in-
ventory through July 10.

8

Wednesday
8:30 p.m. *Amateur As-
tronomers Association Star
Party*. Meet outside
Planetarium. Free

First Quarter (half moon)

11

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

14

Tuesday
6:15-8:30 p.m. *Jules
Verne Film Festival*. Tickets
required. (See article page 3.)

15

Wednesday
6:15-8:30 p.m. *Jules
Verne Film Festival*. Tickets
required. (See article page 3.)
7:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

16

Thursday
6:15-8:30 p.m. *Jules
Verne Film Festival*. Tickets
required. (See article page 3.)

17

Friday
Full Moon

18

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

21

Tuesday
7:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)
8:00 p.m. *Linnaean Society*.
Rm. 129. Free.

22

Wednesday
7:00 p.m. *Galapagos: Almost
Eden*, with Tui De Roy
Moore. Auditorium. Free. (See
article page 2.)

24

Friday
7:30 p.m. *Aboriginal Life:
A Film Retrospective*. Tick-
ets required. (See article
page 3.)

Last Quarter (half moon)

25

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

28

Tuesday
6:00-9:00 p.m. *Members'
Reception for Shake-
speare: The Globe and the
World*. Reservations required.
Call (212) 873-1327.
8:00 p.m. *Met Grotto; Na-
tional Speleological Society*.
Rm. 129. Free.

29

Wednesday
5:30-7:30 p.m. *An Evening
of Storytelling*. (See article
page 2.)
7:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

Delta Aquarid Meteor Shower

30

Thursday

New Moon (not visible)

August

1

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

7

Friday
First Quarter (half moon)

8

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

12

Wednesday
8:00 p.m. *Amateur As-
tronomers Association Star
Party*. Meet outside of Hayden
Planetarium. Free.

Perseid Meteor Shower.

15

Saturday
Full Moon

18

Tuesday
8:00 p.m. *Linnaean Society*
Rm. 129. Free.

22

Saturday
1:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

Last Quarter (half moon)

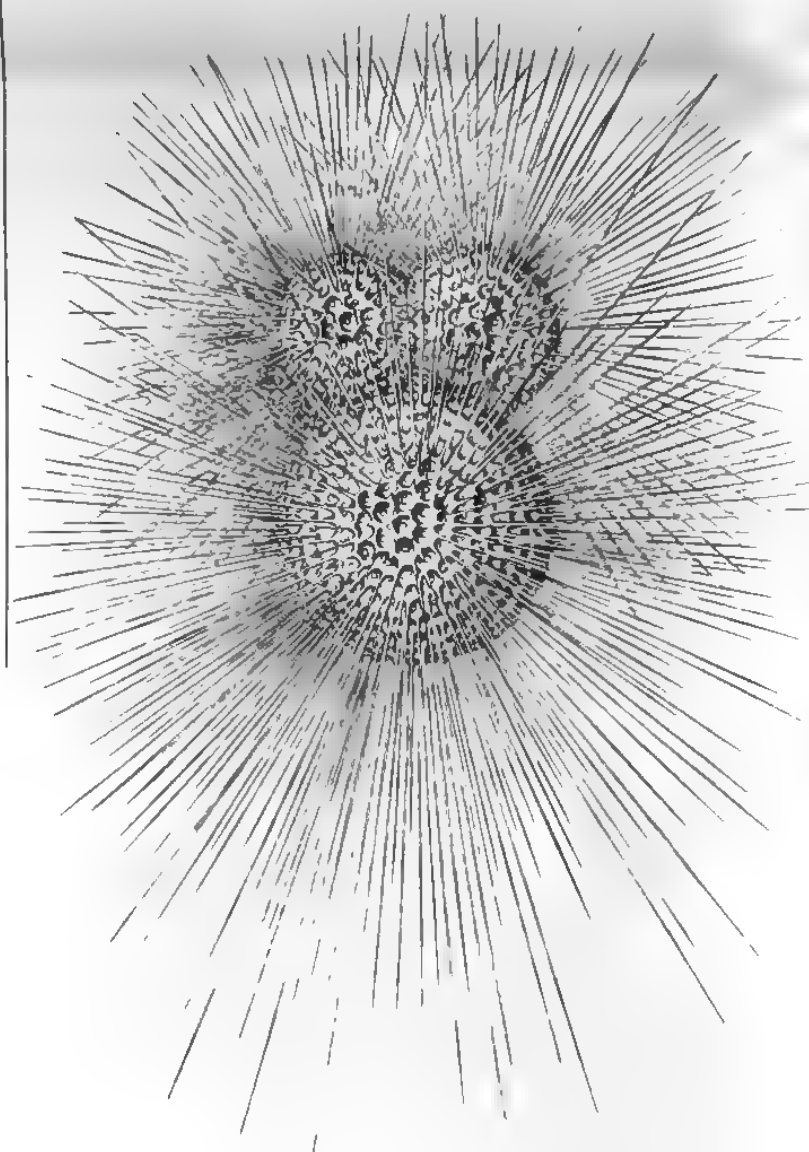
25

Tuesday
8:00 p.m. *Met Grotto; Na-
tional Speleological Society*
Rm. 129. Free.

29

Saturday
3:00 p.m. *Shakespeare
Summerfest Program*. (See
schedule page 6.)

New Moon (not visible)

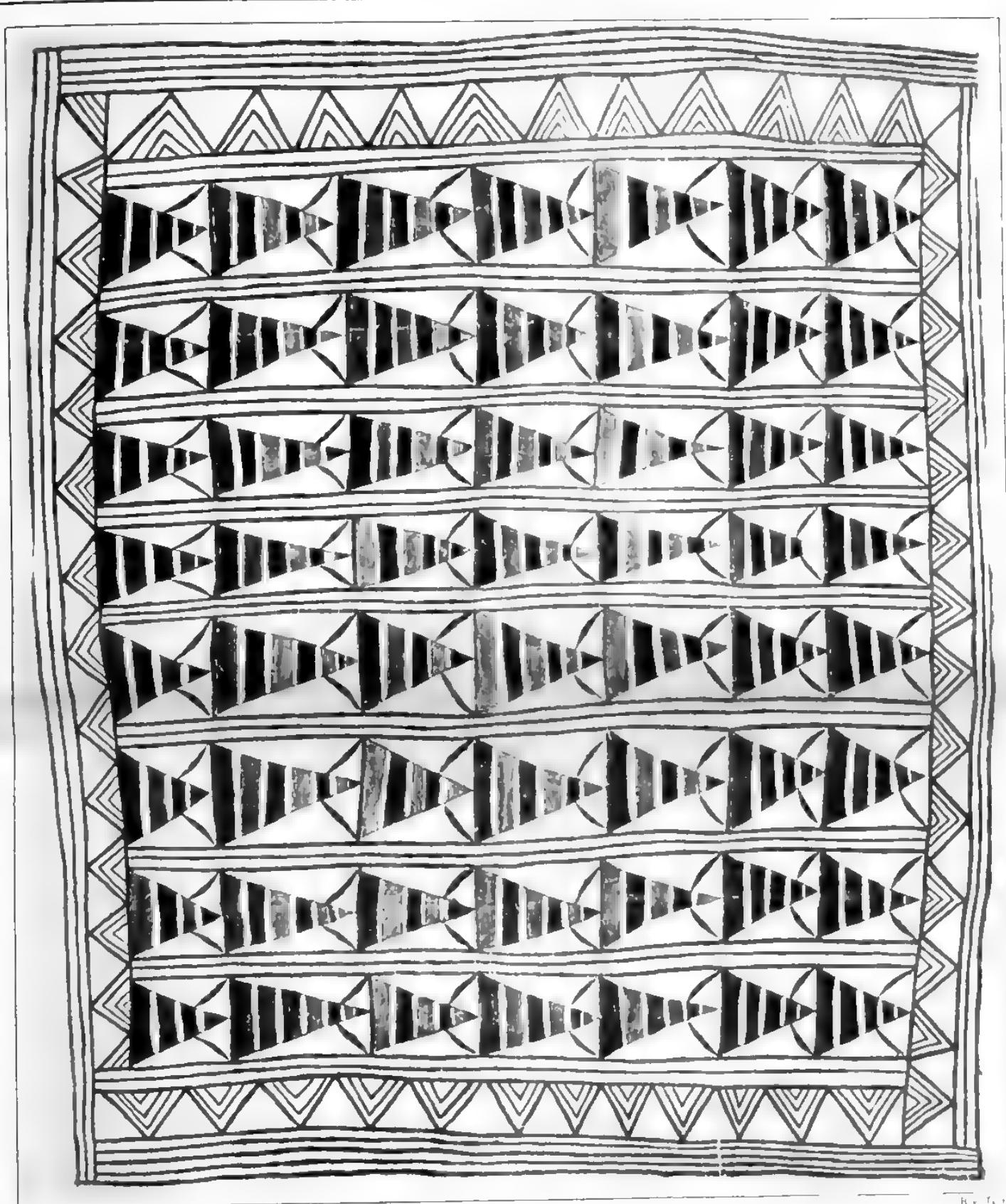


Globigemma foraminifer

1981
**American Museum
of Natural History**

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 5, No 9 November 1981



Patterns of Paradise

Opens November 18 in Gallery 77

Tapa, or bark cloth, is made by beating the inner bark of mulberry and similar trees until it becomes a smooth, fibrous, and somewhat fragile cloth. It is a product of tropical cultures throughout the world. Taking anywhere from an hour to a month to finish, it can be as thick as a wool blanket or as thin as a silk scarf, as stiff as parchment or as soft as chamois leather.

The cloth has served numerous and diverse purposes, varying over time and from culture to culture. Babies have been born on it and swaddled in it. It has caught the blood of battle and of circumcision, lined marriage beds and been used to strangle widows. It has shrouded both commoner and

king, been given in dowries, and used in peace offerings. Even Europeans adapted it to caulk the hulls of sailing ships and to line the chambers of modest missionaries. Design and patterns on the cloth give the fabric its strong visual appeal. Depending on the time and culture, it has been dyed, watermarked, ribbed, painted, stenciled, stamped, oiled, and marked by snapped cords wet with color.

The exhibition contains more than 150 examples of tapa from the Pacific and Caribbean Islands, Southeast Asia, Africa and South America. Highlights include a collection of colorful mourning hats from Papua New Guinea, a fringed dance costume from Brazil, and a magnificent Jivaro Indian skirt

A hand-painted piece of Samoan tapa cloth. This is one of the more than 150 pieces in the exhibition, Patterns of Paradise.

from Peru. The skirt has been beaded with bits of cut clamshell, tiny monkey teeth, the leg bones of birds, and iridescent beetle wings.

This is a touring exhibition, organized by the Chicago Field Museum, organizers of the popular *Feather Arts* exhibition last fall, and is free to all Museum visitors.

Tropical Topics

A symposium on tropical rain forests will be held at the Museum and will explore conservation and related topics.

Page 3

Behind the Scenes

Members, join us for a unique *Behind-the-Scenes Tour* of the Departments of Mammalogy and Ornithology.

Page 2

Fabulous Folding

It's time to register for the fourth annual *Members' Origami Workshop*. Practice instructions for an origami seal are included.

Page 5

Zeus, Baal and Company

Claireve Grandjouan will use the Mediterranean mythic traditions to illustrate the relationship between myths and the environment.

Page 3

A Strange Little Sister

Meshie, a young, female chimpanzee, was adopted into a family and became more than just a pet.

Page 5

Don't miss the special exhibition, *Afro-American Arts From the Suriname Rain Forest*, in Gallery 3 through January 24.

Participating, Donor and Elected Members
are invited to join a special

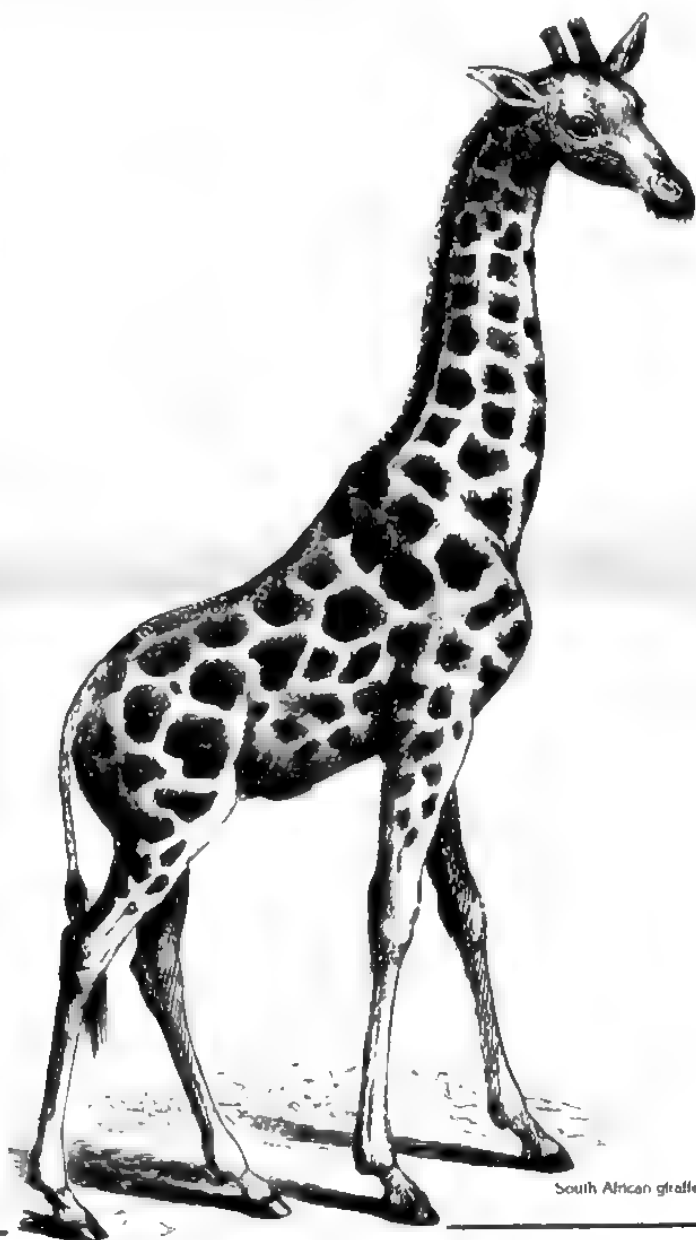
Behind-the-Scenes Tour

of the
Department of Mammalogy
and the
Department of Ornithology

Wednesday Evening, November 4

or
Sunday, November 8

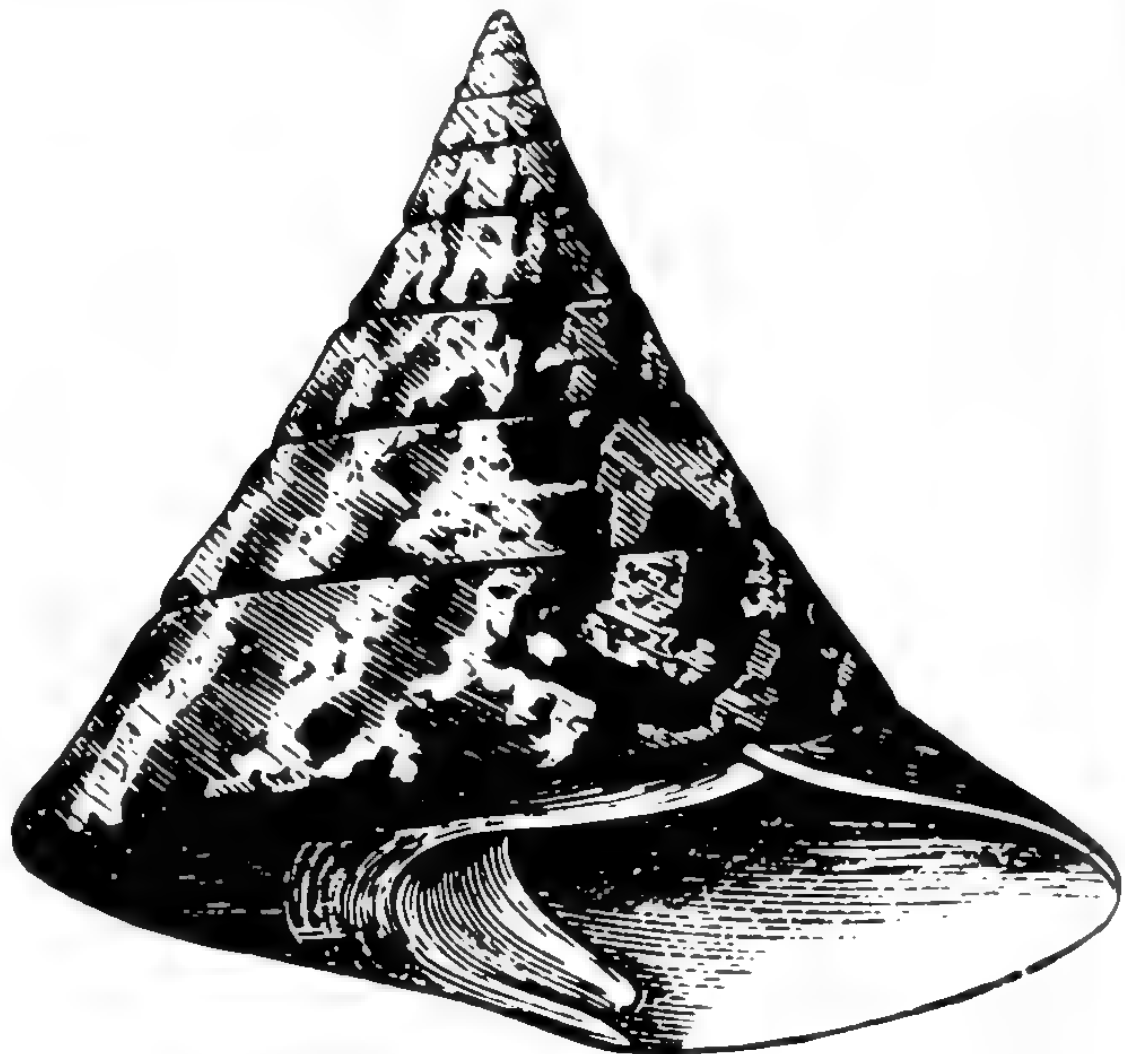
We take you to areas of the Museum that are never open to the general public. You will meet members of the Museum staff who will show you the laboratories in which they work and the storerooms that house the Museum's extraordinary collections of mammals and birds. Staff members will discuss the current research of their departments and explain how materials are prepared for the Museum collections. The tour will last about an hour and a half. At the end of the tour, light refreshments will be served in the Audubon Gallery. **Tickets are \$5.50 per person. Reservations can still be made by calling (212) 873-1327.**



South African giraffe

Members' Shell Weekend

November 21, 12:00 to 4:30 p.m. November 22, 11:00 a.m. to 4:30 p.m.
Auditorium and Education Hall.
Free for Members, \$2.00 for non-members.



Trochus nuchus

The Membership Office, in cooperation with the Department of Invertebrates and the New York Shell Club, is pleased to invite Members to a **Shell Weekend**. On the weekend of November 21 and 22, Members walking into the Education Hall will be greeted by shells of all shapes, sizes and colors from all over the world. There will be cowrie and cone shells, spiral and saucer-shaped shells, shells with beads and others with twisted spines. There will even be a shell used by Polynesians to bail out their canoes.

Members of the Department of Invertebrates will bring down a selection of exotic shells from the Museum's collection of 2,000,000 specimens, and collectors from the New York Shell Club will display specially prepared exhibits of their own collections.

Museum scientists will be on hand to identify any shells that you might own and also to discuss the biology and natural history of mollusks. Shell collectors will give you tips on how to start your own collection and what to look for in nearby areas. You will also have the opportunity to play shell bingo, view a demonstration of shell crafts, and draw your favorite shell on our "shell-scape."

Mollusk Film Festival As part of the **Shell Weekend**, there will be a **Mollusk Film Festival** in the Auditorium. The program will feature films of snails, clams, octopuses (mollusks even though they have no external shell), and other mollusks. The program provides an opportunity to view mollusks in their natural environment, and to learn about the unique ways they

Come wonder at the glories of the sea and shore at an in-depth look into the world of shells and other invertebrates

have developed to swim, eat and breed. The program will be repeated at 12:30, 2:00 and 3:30 p.m. of each day of the festival.

The **Shell Weekend** is free to all categories of Membership and to Members of the New York Shell Club. Your Membership Card is your ticket of admission. The general public may purchase tickets for \$2.00 at the Auditorium door on the days of the program.

ROTUNDA

ISSN 0194-6110

Vol. 5, No. 9
November 1981

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Socodato — Designer
James Budenholzer — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1981 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

Members' Memo

We proudly announce a magnificent new landmark publication of the American Museum: *Asia: Traditions and Treasures*. It celebrates the creation of the Gardner D. Stout Hall of Asian Peoples with ninety-six superb full-color photographs of priceless Asian treasures from our collection: translucent jades, delicate ivories, wrought gold, silver and brass, richly woven rugs, painted silk tapestries, statues of terrifying Buddhist demons, and much more. In addition, there are rare nineteenth and early twentieth century photographs from the Museum archives to supplement the fascinating text by

Walter A. Fairbanks Jr., Scientific Consultant for the hall.

Until December 31, 1981, Members can purchase this book for just \$39.95, a 20% discount off the cover price. This richly illustrated and delightfully readable book is the perfect gift for the travellers on your list, both armchair and otherwise.

Many other gift ideas can be found in the Museum shop catalogue, which was mailed to our Members in September. If you did not receive one or would like another, please call us at (212) 873-1327.

And, of course, don't forget the gift of Membership. It makes a wonderful year-round

gift as issues of *Natural History* and *Rotunda* arrive each month. This year, why not give Stephen Jay Gould and Raymond Sokolov to all the curious on your list?

Remember that when you purchase a holiday gift from the Museum you are really giving two gifts — one to your friend and one to us. It is one more way that you can support the Museum.

Kate Bennett-Mendez

Tropical Rain Forest Symposium

Wednesday, December 9, 6:00 to 8:00 p.m. Auditorium.
\$6.00 for Members, \$8.00 for non-members.



Dr. George M. Woodwell



Dr. Ghilleen T. Prance



Dr. Thomas E. Lovejoy



Moderator Russell E. Train

Tropical rain forests are the most complex ecological system on earth, with more than half of the world's species of plants and animals inhabiting them. More than four hundred species of trees can be found in the tropical rain forest, compared to the ten or fifteen found in most temperate ones; and scientists have noted that species of animals — particularly insects — can vary significantly from valley to valley.

This rich biological diversity is now threatened by the advance of civilization. The soil does not farm well, as it lacks many important minerals. Once cleared and exposed to the weather, nutrients are rapidly leached by the rains and the sun. The complex chain of life, so intricately interwoven, can be destroyed in a single year.

In a major symposium to be held at the Museum, three noted authorities will discuss tropical rain forests, the vast wealth of knowledge they have provided, the fascinating areas of current study, and the kind of discoveries that could still lie within them. The participants will be Dr. Thomas E.

Lovejoy, Vice President for Science, World Wildlife Fund-U.S.; Dr. Ghilleen T. Prance, Senior Vice President for Research and Director of the Institute of Economic Botany at the New York Botanical Garden; and Dr. George M. Woodwell, founder and Director of the Eco systems Center at the Manne

Biological Laboratory in Woods Hole. Russell E. Train, president of the World Wildlife Fund-U.S. and speaker at the Museum's centennial celebration in 1969, will be the moderator.

To order tickets please use the adjacent coupon. Members are advised to register early.

Tropical Rain Forest Symposium

Participating, Donor and Elected Members are entitled to four tickets at the Members' price of \$6.00. Associate Members and students are entitled to one. All other tickets are \$8.00.

Number of tickets at the Members' price of \$6.00

Number of tickets at \$8.00

Total amount enclosed

Name

Address

City

State

Zip

Daytime phone

Membership category

Please make checks payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to Tropical Rain Forest Symposium, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Mythic representations of the rivers Nile (above) and Tiber (below). Join Claireve Grandjouan as she discusses the myths of the Mediterranean and their relationships to the environment.



Land and Gods

Wednesday, December 2, 7:00 p.m. Auditorium.
\$5.00 for Members, \$6.00 for non-members.

The relationship between myth and the environment will be the subject of a lecture entitled *Land and Gods*, by Claireve Grandjouan. Focusing in particular on the myths of the Mediterranean, she will explore the deep significance the environment has had on the development of these traditions.

One of the topics on which she will focus is the confusing attributes that certain gods have acquired. Why Hermes, for example, the god of com-

munication and travel, is also the god of sheep flocks. Or why Zeus's debauching of nymphs promises fertility to the land.

Claireve Grandjouan, Professor of Classics at Hunter College, has presented numerous lectures at the Museum on classical archeology and has taught several popular courses for the *Afternoon and Evening Lecture Series*.

To order tickets, please use the adjacent coupon. Members are advised to register early.

Land and Gods

Participating, Donor and Elected Members are entitled to four tickets at the Members' price of \$5.00. Associate Members are entitled to one. All other tickets are \$6.00.

Number of tickets at Members' price of \$5.00

Number of tickets at \$6.00

Total amount enclosed

Name

Address

City

State

Zip

Daytime phone

Membership category

Please make checks payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to *Land and Gods*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

More than Meets Most Eyes

The National Science Foundation recently granted the Museum a large sum of money to purchase and install a new Scanning Electron Microscope (SEM). This is the second acquisition in less than a decade, but technological achievements have been so great in the last ten years that the first SEM has become obsolete. Solid state electronics have replaced the old vacuum tubes, and many "temperamental" adjustments — subtle and time-consuming when done by hand — are now handled automatically by microcomputers.

When we visited the Interdepartmental Laboratory to see the new equipment, the lights were off but the door was open. Across the room two video displays blinked and rolled.

"It's giving me trouble today," said a voice out of the darkness, and a figure moved into silhouette to make adjustments. A light came on and we discovered that the voice belonged to Joan Whelan, the new operator of the microscope. Her background, she told us, includes a Bachelor of Science degree in physics and a Master of Science degree in biology.

She finished aligning the final aperture of the SEM and brought a specimen into focus. The specimen, we learned, had been covered with a thin layer of gold. This metallic coating is necessary to reflect the beam of electrons and create the image. Because it is so thin — literally just a few atoms — the gold doesn't affect the surface detail.

We learned that most of the technological advances that justify the new acquisition take the form of greater efficiency: more scientists can use the new SEM for longer periods of time. Also, the resolution of surface detail remains accurate at much higher magnifications. Another significant difference is the enlarged size of the specimen chamber. Previously, nothing larger than a 1/2-inch square could be observed. While most studies focus on an area even smaller than this, specimens that were larger had to be fragmented and, in a sense, destroyed. The new chamber, eight times greater in size, allows for observations of whole mollusk shells, small skulls, and numerous complete specimens that couldn't be fractured for study.

The sophistication of the equipment, clearly, was also one of the benefits. Whelan will be doing a lot of experimentation (she calls it "playing") to see just how far she can stretch the machine's capabilities. We asked her what she had been doing to "play."

She explained that she had been helping Museum scientists to study the micro-surface structure of arthropods and mollusks, rare dentition in mammals, and the sensory apparatus of insects.

"We also did a photo mosaic of a flea," she said, "for the exhibit **Through the Looking Glass: A History of Microscopes** (in the Akeley Gallery through December 30). I took about eighty photographs and we pieced them together." She brought the flea up on the screen, fifty times its normal size. "This is the largest it can get and be contained in the screen. We could have shot the whole flea in one frame, but the challenge was to get it up to a greater magnification than the frame would hold."

She raised the magnification, and the flea expanded out of the picture, leaving only an area where a leg met the body.

"This is at 500-times, where we did the photo mosaic. In the exhibit it will hang next to a flea drawn by Robert Hooke for his book *Micrographia* (1664)." She produced a copy of Hooke's illustration. "It's actually remarkable how accurate he was, considering the limitations of his instruments. One of the qualities the SEM has is that it displays an image of the entire object. Old-fashioned light microscopes are very restricted in that they can only focus on the area a certain distance from the lense. The SEM allows the whole object to be in focus at the same time. You can see the physical structure of the object, look down into small cavities, recognize depressions, see hair-like appendages more clearly."

She brought a bee onto the screen and enlarged its antenna step by step, until a section of it was the size of her arm. A regular pattern of various sized holes ran the length of the antenna. We asked her what they were.

"There is a sensory apparatus at the bottom of each of those cavities. Each size hole picks up a different kind of sensation, allowing the bee to learn about its environment."

She enlarged the image until one of the holes was a gaping cavern the size of a dinner plate.

"This is about 120,000-times. You can see the edge quite clearly as it drops into the cavity."

Suspecting a limit, we asked if she could probe down into the hole.

"Not with this specimen," she said, "because it isn't prepared properly. The metallic coating doesn't extend into the holes, so electrons would accumulate and repel the elec-

tron beam. The image, if there were any, would contain a good deal of glare, like looking at the surface of the water into the sun. All we would have to do, though, is to dissect and prepare an antenna and we could get in with no trouble. We're at a magnification right now of 120,000-times, but we could take it up higher."

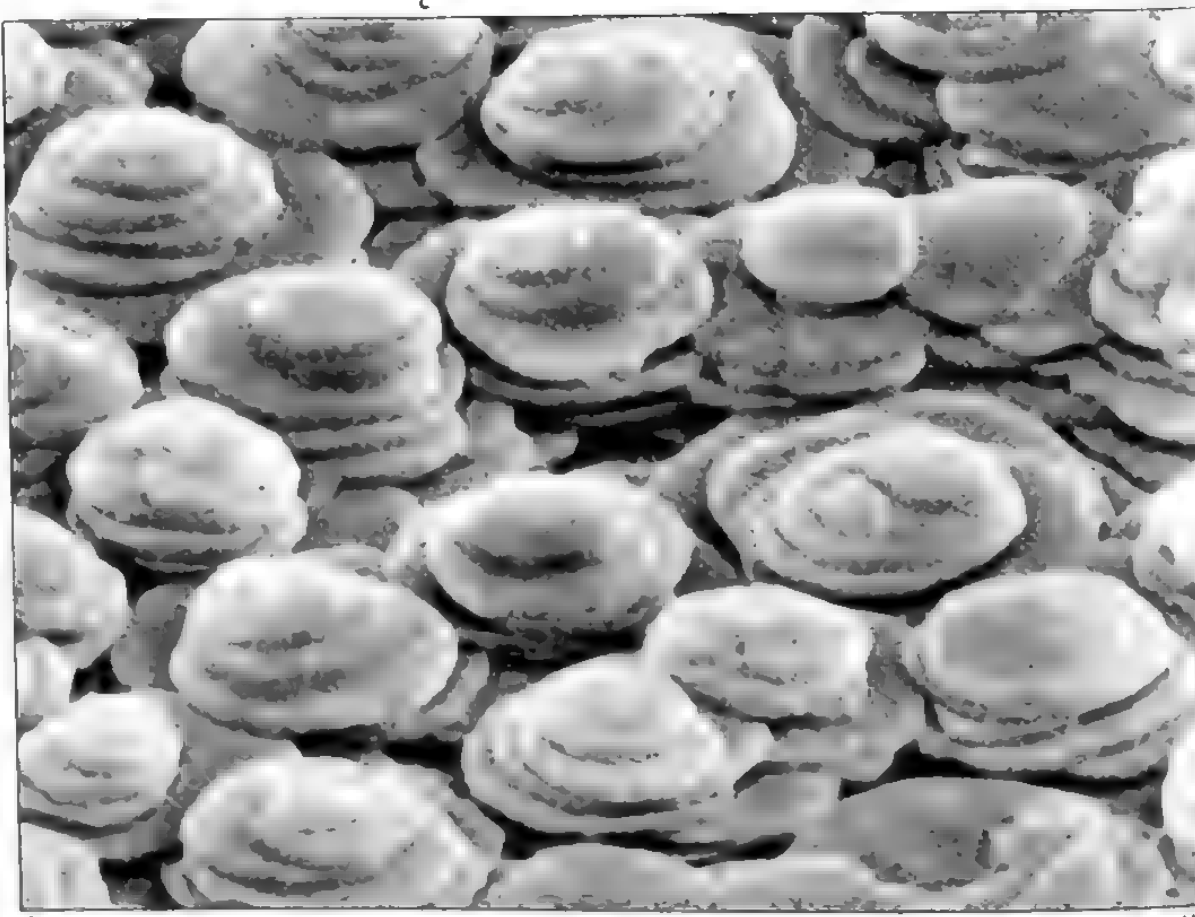
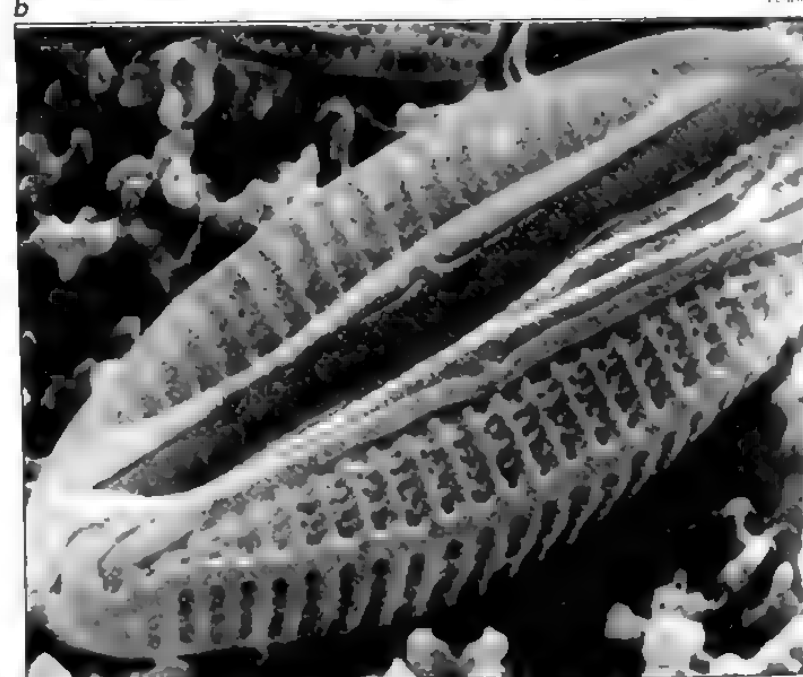
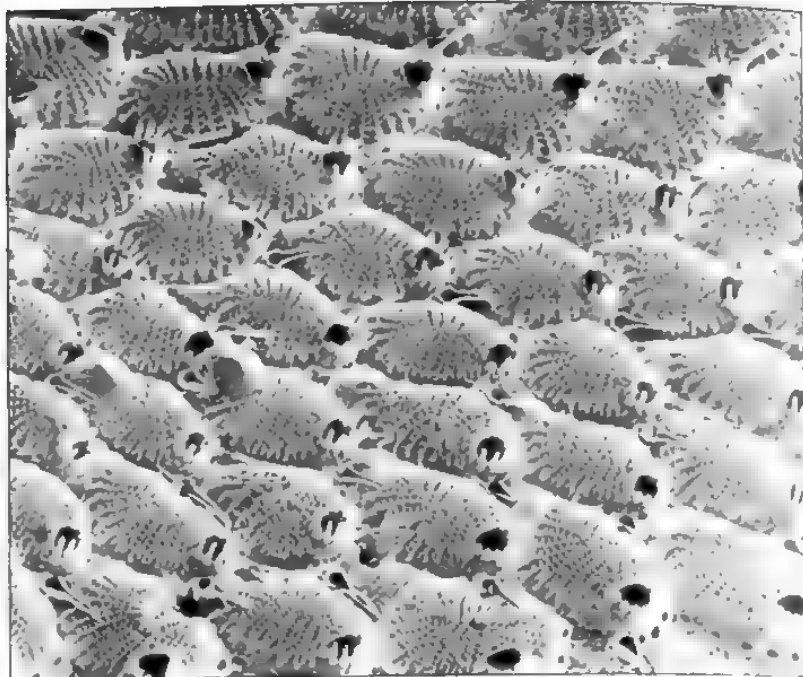
We asked her what the machine was capable of.

"The higher the magnification, the more difficult it becomes to maintain clear resolution. Edges begin to blur as the study-area gets progressively smaller. The equipment is capable, however, of magnifying 300,000-times with acceptable resolution."

A quarter, we noted, magnified 300,000-times, would have a diameter of almost five miles.

— Stanton G. Orser

Current research on the new Scanning Electron Microscope includes work on: (a) bryozoans, by Dr. Judy Winston, determining diagnostic features to be used in classifying the animal in its phylum; (b) a mouth part of a new, tiny species of tarantula (only 1/30th of an inch across), by Dr. Norman Platnick, to see certain family characteristics visible only under extreme magnification; (c) an *Amphora* diatom from Dr. John Lee's study of the 'living sands' of the Red Sea — creatures so small that the details have been visible only since the advent of electron microscopes; and (d) mother-of-pearl, or nacre, from the growing edge of a shell found in the deep Atlantic that is being studied by Dr. Roger Batten.



Bringing up Meshie

Wednesday, December 16, 7:30 p.m.
Auditorium. Free and open only to Members.



Meshie AMNH

In 1929, Harry Raven of the Museum's Department of Comparative and Human Anatomy went to West Africa on a Museum research trip. When he returned home, he startled his wife and two children by pulling a baby chimpanzee out of his pocket. The chimpanzee was an orphan, found by African natives on a hunting trip. They named her Meshie and sold her to Dr. Raven. For the next five years, Meshie grew up as a member of the Raven family. Harry Shapiro, Curator Emeritus in the Department of Anthropology, and a close friend of Dr. Raven, will present an anecdotal account of

Meshie's life with the Raven family at the December Members' program. The program will include a series of home movies that Dr. Raven took of Meshie. There are enchanting scenes of the chimp as she bicycles and sleds with the Raven children, learns to drink from a straw, dines with impeccable manners, and even feeds the Raven's baby. Meshie was perhaps the first chimpanzee ever raised by a human family. Although she was not raised with any scientific goals in mind, she provides a good illustration of a primate's ability to adapt to a new environment. She also raises intriguing questions about the common origins of humans and other primates. The program is free and open only to Members of the Museum. To register please use the adjacent coupon.

Bringing up Meshie

This program is open only to Members of the Museum and their guests. Participating, Donor and Elected Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased for \$2.00 each.

Please send me _____ tickets

Additional tickets at \$2.00 each:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Meshie, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After November 10 please call (212) 873-1327 for ticket availability.

The Fourth Annual Members' Origami Workshop

Saturday, December 5, 10:30 a.m. to 4:30 p.m.
Education Hall. Free and open only to Members.

SEAL traditional

1 Paper square. Colored side down. Fold in half diagonally. Unfold.

2 Fold in half on the other diagonal. Unfold.

3 Bring two adjacent edges to meet along one of the diagonal creases. Folders call this an "ice-cream cone".

4 Unfold.

5 Bring the other two edges to meet along the same diagonal.

6 Fold model in half crosswise, matching the black dots. The cut edges of the broader end will turn under and inward on their ice-cream-cone creases and the model will come out kite shaped.

7 Fold the tip of the upper layer forward to touch the bottom of the broad "V" made by the crosswise creases. (Match the black dots.) This little flap will be the rear flippers of the seal.

8 Fold the two little triangles at the broader end of the kite down over the tip of the back flippers. These will be the front flippers of the seal.

9 Step 8 complete. Turn the model over.

10 The model is now triangular. Fold the remaining long point to touch the middle of the short side. (Match the black dots.) This flap becomes the neck and head.

11 Fold the head in half to blunt the end of the nose.

12 Fold the whole model in half the long way, with the head and neck inside.

13 Reach between the layers of the body from the top and take hold of both sides of the neck (NOT the head, which is between the layers of the neck.) Pull forward and upward until the neck is in the position shown by the dotted line. Press model flat.

14 Reach between the layers of the neck from the front and pull up the head. Fold the front flippers forward so that the forward edge is a little in front of the vertical crease at their base. Pull the tip of the rear flippers down just a little.

15 Finished seal. It will stand!

Members once again have the opportunity to magically transform squares of paper into swans, penguins, whales, crystals and flowers at the fourth annual Members' Origami Workshop. While novices fold the above mentioned items, advanced folders will create peace doves, the Shining Alice (an 8-pointed star), a barking dog, and a "Museum Surprise." The workshops will be led by Alice Gray, Michael Shall and the Friends of the Origami Center of America — the same people who create the Museum's famous Origami Holiday Tree. The tree, which

will go on display on November 23, is decorated with origami figures that cover the spectrum of the natural world: from elephants and tigers to spiders and jellyfish to dragons and dinosaurs. The Origami Workshop is free and open only to Participating, Donor and Elected Members of the Museum. It is for all ages, adults as well as children, although it is best suited for children seven years and older. To register use the adjacent coupon. Early registration is advised to avoid disappointment. If you would like to practice, fold the origami seal that appears on this page

Members' Origami Workshop

I would like to register for the time marked below (please indicate a first, second and third choice of times)

Number of people _____

10 30 a.m. 11 30 a.m. 1 30 p.m.
2:30 p.m. 3:30 p.m.

There will be an overflow workshop at 12:30 p.m. if the other workshops are filled. Please check here if you can attend this workshop.

I would like to join the advanced workshop (number of people) ____ I/we can fold the Flapping Bird. (Note that this is different than the Traditional Swan.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Origami Workshop, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After November 10, please call (212) 873-1327 for ticket availability.

To Dance One's Dreams

Sunday, November 8, 2:00 and 4:00 p.m.
Auditorium. Free.

To initiate an experiment in inter-cultural dance theatre, three members of the modern dance company Solaris traveled to the Lakota Sioux reservations in North Dakota. After participating in a number of rituals, and observing others, they gave a 'thanksgiving' performance. They demonstrated their working methods and gave an improvisational piece based on their experiences on the reservations. Following the performance, elders in the tribe observed that the Solaris techniques were culturally similar to those used by the Lakota of former times to act out their dreams, visions and exploits.

The experiment, now completed, combines Lakota Sioux dancers performing the traditional dances of the tribe with members of Solaris interpreting the Lakota Sioux stories and myths in a modern dance idiom. It is titled *Ihan-bla Waktoglag Wacipi (To Dance One's Dreams, Visions or Exploits)* and has received international attention and acclaim. The performance at the Museum, its New York premiere, will be free to all Museum visitors.

Members of Solaris, a modern dance company, performing from their repertoire. Their cross-cultural dance experiment with members of the Lakota Sioux tribe will have its New York premiere at the Museum.



David Fuller

Classical Khmer Dance

Sunday, November 15, 2:00 p.m.
Auditorium. Free.



Rick Reinhardt

The Royal Classical Khmer Ballet came to the United States for the first time in 1971. On a grand tour from their palace quarters in Phnom Penh, Cambodia, they impressed audiences across the country with the suppleness of their bodies and the lavishness of their costumes.

Ten years and a devastating war later, Khmer Ballet members are once again performing in the United States, but under greatly different circumstances. When the Khmer Rouge swept through Cambodia in 1975, routing the citizens into the fields, they targeted intellectuals and artists to be victims of their violence. A few of the remaining singers, dancers and musicians

The white monkey attacking the demon forces in one of the classic Khmer dances. Suppleness of the limbs and stunning costumes mark this unique dance form from Cambodia.

worked for several years disguised as farmers. They gradually made their way to Thai refugee camps where they found each other and decided to regroup. Various organizations offered to sponsor them, and they are gradually settling outside of Washington D.C.

They gave their first performances this past spring, with their distinct movements and extraordinary suppleness as impressive as ever. Marks of changes were there, however: no more were there the lavish jeweled costumes, and one musician played a flute he had fashioned himself from a bicycle frame in a refugee camp.

But the dance itself is very much alive, and already a new generation has begun the rigorous training required for the characteristic suppleness and grace.

The performance at the Museum is sponsored by the Society for Asian Music and will be free to all Museum visitors.

How Far Are We from Home

Wednesday, November 18, 7:00 p.m.
Auditorium. Free.

John Burroughs (1837-1921) was an American author, poet and naturalist. Through his books and articles, he did more than any other writer of his epoch to create an interest in the natural sciences and outdoor life. His essays were used as the basis for the first nature studies used in American schools.

He once wrote, "We can use our scientific knowledge to improve and beautify the earth, or . . . to deface and exhaust it. We can use it to poison the air, corrupt the waters, blacken the face of the country, and harass our souls with loud and discordant noise; or we can use it to mitigate or abolish all these things."

Close personal friends with John Muir and Theodore Roosevelt, John Burroughs opened his home to family, friends and students — almost anyone who shared an appreciation of the natural world.

How Far Are We from Home: John Burroughs is a film portrait of Burroughs. It will be shown with a ten-minute, silent film entitled *A Day with John Burroughs*, which shows him walking with three young children in the fields around his home.

The program is free to all Museum visitors.

John Burroughs at home



AMNH

Members' Tour of the Month Asian Peoples and Mammals

This month's tour will introduce you to the Museum's largest and most comprehensive anthropological hall: the Gardner D. Stout Hall of Asian Peoples. The tour will provide insights into the cultures of China, India, Japan and other nations of Asia. Members will learn about many of the outstanding artifacts in the exhibit, ranging from an eighteenth-century Buddha covered in gold leaf to a rare piece of white jade presented to a Chinese emperor. Tour leaders will point out the various themes that

run throughout the hall: the individual's relationship to family and society, the beliefs that unify a culture, and the ways that cultures adapt to their environment. The tour will also include a stop in the Hall of Asian Mammals to look at the great cats of Asia as well as lesser known mammals such as the sloth bear and barking deer.

All tours are led by volunteers in the Museum's Highlights Tour program. The tours are open only to Members of the Museum. To register use the adjacent coupon.

Asian Peoples and Mammals

Please indicate a first and second choice.

- ☐ Wednesday, December 2 at 6:30 p.m.
- ☐ Sunday, December 6 at 10:30 a.m.
- ☐ Wednesday, December 9 at 6:30 p.m.
- ☐ Saturday, December 12 at 10:30 a.m.
- ☐ Sunday, December 13 at 10:30 a.m.
- ☐ Saturday, December 19 at 10:30 a.m.

Number of people: _____

Name: _____

Address: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Membership Highlights Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After November 10, please call (212) 873-1327 for ticket availability.

Museum Notes

Special Exhibitions

Afro-American Arts of the Suriname Rain Forest. October 28 through January 24 in Gallery 3. Includes elaborate woodcarvings, colorful textiles, and other objects from this South American culture.

Patterns of Paradise. November 18 through February 14, 1982 in Gallery 77. A touring exhibition from the Field Museum of Chicago on tapa, or bark cloth. Includes examples from tropical areas all over the world. (See article page 1.)

Through the Looking Glass: The History of Microscopes. Through December 30 in the Akeley Gallery. Traces the development of microscopes from the first discoveries through present-day, high-technology Scanning Electron Microscopes. Includes drawings and examples of microphotography. (See article page 4.)

Natural History Photo Competition Winners. Center Gallery, second floor. A collection of prize-winning photography in several areas of natural history, including the Human Family, Animals, Plants and Their Environments, and a new category this year, Historical Photographs.

The Art of Maria Sibylla Merian (1647-1717). Through December in the Library Gallery. An exhibit of her scientific and artistic works on the insects of Suriname; from the Rare Book collection.

The Mediterranean Fruit Fly and the Woolly Bear Caterpillar. Through November 12 in the Roosevelt Rotunda. Two small exhibits on these controversial creatures.

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented in the People Center weekends from 1:00 to 4:30 p.m. Refer to the full-page calendar for specific events.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

December at the Museum

Land and Gods, with Claireve Grandjovan. Wednesday, December 2 at 7:00 p.m. Reservations required. (See article page 3.)

Members' Origami Workshop. Saturday, December 5. Reservations required. (See article page 5.)

New Natural History Films. Saturday and Sunday, December 5 and 6, 1:00-4:00 p.m. Auditorium. Free.

Tropical Rain Forest Symposium. Wednesday, December 9, 6:00-8:00 p.m. Reservations required. (See article page 3.)

All Nations Dance Company. Sunday, December 13, 2:00 p.m. Auditorium. Free.

Meshie. Wednesday, December 16, 7:30 p.m. Reservations required. (See article page 5.)

Museum Information

Museum Hours: 10:00 a.m. to 4:45 p.m. Saturdays, Sundays and holidays until 6:00 p.m. Wednesdays until 8:00 p.m.

Cafeteria Hours. Daily 11:00 a.m. to 4:15 p.m. Saturdays, Sundays and holidays until 5:15 p.m. Wednesday evenings until 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$4.25 for cars, \$5.00 for buses. Parking is limited.

Southwestern Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit write ahead for details. Southwestern Research Station, Portal, Arizona, 85632.



The Museum proudly announces the publication of *Asia Traditions and Treasures* in celebration of the Gardner D. Stout Hall of Asian Peoples. With a fascinating text written by Walter A. Fairservis Jr., and superb color photographs by Lee Bollin, this book will make a fine addition to your holiday shopping list. For more information see the Members' Memo, page 2.

Planetarium Events

The Night of the Hunter. Through November 23. Orion has been called the Hunter for thousands of years. This show combines astronomy and mythology to explore the fascinating phenomena that make up this constellation.

Star of Wonder. November 25 through January 5, 1982. What was the "Star of Wonder" that led the wise men on their journey to Bethlehem? Was it a comet? A bright meteor? Some have suggested that it was a nova or even a rare grouping of planets. This show is a celebration of the holiday season for the whole family. Sky show times:

Weekdays: 1:30, 3:30 p.m.
Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive 25% discounts on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Are You For OR Against Santa Claus?

Being somewhat scientifically inclined, the editor of *Natural History* admits to a certain scepticism about the existence of Santa Claus. Of course, many unconfirmed reports, most notably by the late Professor C. Moore, tell of sightings and even interactions with Santa Claus. But these observers were not scientists. Can we believe them? Where is the proof?

To solve this problem, we have created the 1981 *Natural History* Santa Claus Poll. It is now up to you, beloved Member of the American

Museum of Natural History, to decide this issue. You can show that you do or do not believe in Santa Claus by giving gifts of *Natural History* and Museum Membership.

In this scientific poll, each gift counts as one vote.

Your out-of-town friends and relatives will appreciate the Associate Membership and subscription to *Natural History*. Give the Participating Membership to couples, families and individuals on your list who might like to become more involved and receive *Rotunda*.



Yes, Natural History, there is a Santa Claus. Bah humbug! There is not! But send my gifts anyway.

Please give an ☐ Associate Membership (\$15) or a ☐ Participating Membership (\$30) to

Name

Address

City

State

Zip

HRP2

Gift card to read

This is a gift from

Name

Address

City

State

Zip

☐ Bill me ☐ Check included

Please make checks payable to the American Museum of Natural History, and mail to the Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. For additional orders fill out the above information on a separate piece of paper.

November 1981

Sun

Mon

Tue

Wed

Thu

Fri

Sat

1 11:00 a.m., 1:30 and 3:30 p.m. *Ghost Stories from around the World.* \$1.00 for Members, \$2.50 for non-members. Call (212) 873-1327 for ticket availability

2

3 Election Day (Museum open until 6:00 p.m.)

4 *Members' Behind-the-Scenes Tours of the Departments of Mammalogy and Ornithology.* Reservations required. (See article page 2.)

5 2:00 p.m. *Introducing the Hall of Asian Peoples.* Gallery Talk with S. Gronewold. Assemble at first floor Information Desk. Free

6

7 1:00-4:30 p.m. *People of Japan.* People Center. Free.

2:00 p.m. *Hurokan: A Dance Premiere.* by the Sundance Company Auditorium. Free. For information please call (212) 873-1300, ext. 559.



First Quarter (half moon)
Taurid Meteor Shower



8 *Members' Behind-the-Scenes Tours of the Departments of Mammalogy and Ornithology.* (See article page 2.)

9

10 8:00 p.m. *Linnean Society. "Bank Swallow Colony Composition,"* with Valerie Freer. Audubon Gallery Free

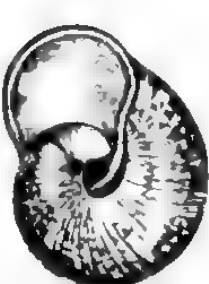
11 7:30 p.m. *New York Mineralogical Society.* People Center. Free

12 Last day to see the exhibits on the Mediterranean Fruit Fly and the Woolly Bear Caterpillar

13

14 1:00-4:30 p.m. *Puerto Rican Heritage.* People Center. Free.

1:00 p.m. *American Cetacean Society.* Rm. 319 Free
1:00-4:30 p.m. *People of Japan* People Center. Free
2:00 and 4:00 p.m. *To Dance One's Dreams.* Auditorium. Free. (See article page 6.)
2:00 p.m. *N.Y. Shell Club.* Rm. 426



15 1:00-4:30 p.m. *Puerto Rican Heritage.* People Center. Free

16 Leonid Meteor Shower

17 8:00 p.m. *New York Entomological Society.* Rm. 129. Free.

18 *Patterns of Paradise* opens in Gallery 77. (See article page 1.)
7:00 p.m. *How Far Are We from Home?* John Burroughs. Auditorium. Free. (See article page 6.)

19 2:00 p.m. *Arctic Adaptation: Eskimo Life.* Gallery Talk with P. Mandel. Assemble at first floor Information Desk. Free

20

21 12:00-4:30 p.m. *Members' Shell Weekend.* Free to Members, \$2.00 for non-members. Education Hall and Auditorium. (See article page 2.)
1:00-4:30 p.m. *Puerto Rican Heritage.* People Center. Free

2:00 p.m. *Khmer Classical Dance from Cambodia.* Auditorium. Free (See article page 6.)
2:00 p.m. *New York Turtle and Tortoise Society.* Rm. 129 Free
2:00 p.m. *New York Paleontological Society.* Rm. 426 Free



7:00 p.m. *Women and Nigerian Society.* People Center.
7:30 p.m. *Lapidary and Gem Society.* Rm. 426. Free.



22 11:00 a.m. to 4:30 p.m. *Members' Shell Weekend.* Free to Members, \$2.00 for non-members. Education Hall and Auditorium. (See article page 2.)
1:00-4:30 p.m. *Puerto Rican Heritage.* People Center. Free

23 *The 1981 Origami Holiday Tree* is on display in the Roosevelt Rotunda. More origami animals than ever before, including dinosaurs, insects, birds and mammals. Come and see this annual holiday treat

24 8:00 p.m. *Linnean Society. "Teeth in Birds,"* with George Clark. Education Hall. Free
8:00 p.m. *Met Grotto: National Speleological Society.* Rm. 129. Free.

25 *Star of Wonder* opens as the Sky Show at the Hayden Planetarium.

26 New Moon (not visible)
Thanksgiving Day (Museum closed)

27 Museum open until 6:00 p.m.

28 1:00-4:30 p.m. *Traditions of Haiti.* People Center Free.

29 1:00-4:30 p.m. *Traditions of Haiti.* People Center Free

30

December 1981

2 7:00 p.m. *Land and Gods with Claireve Grandjean.* Reservations required. (See article page 3.)

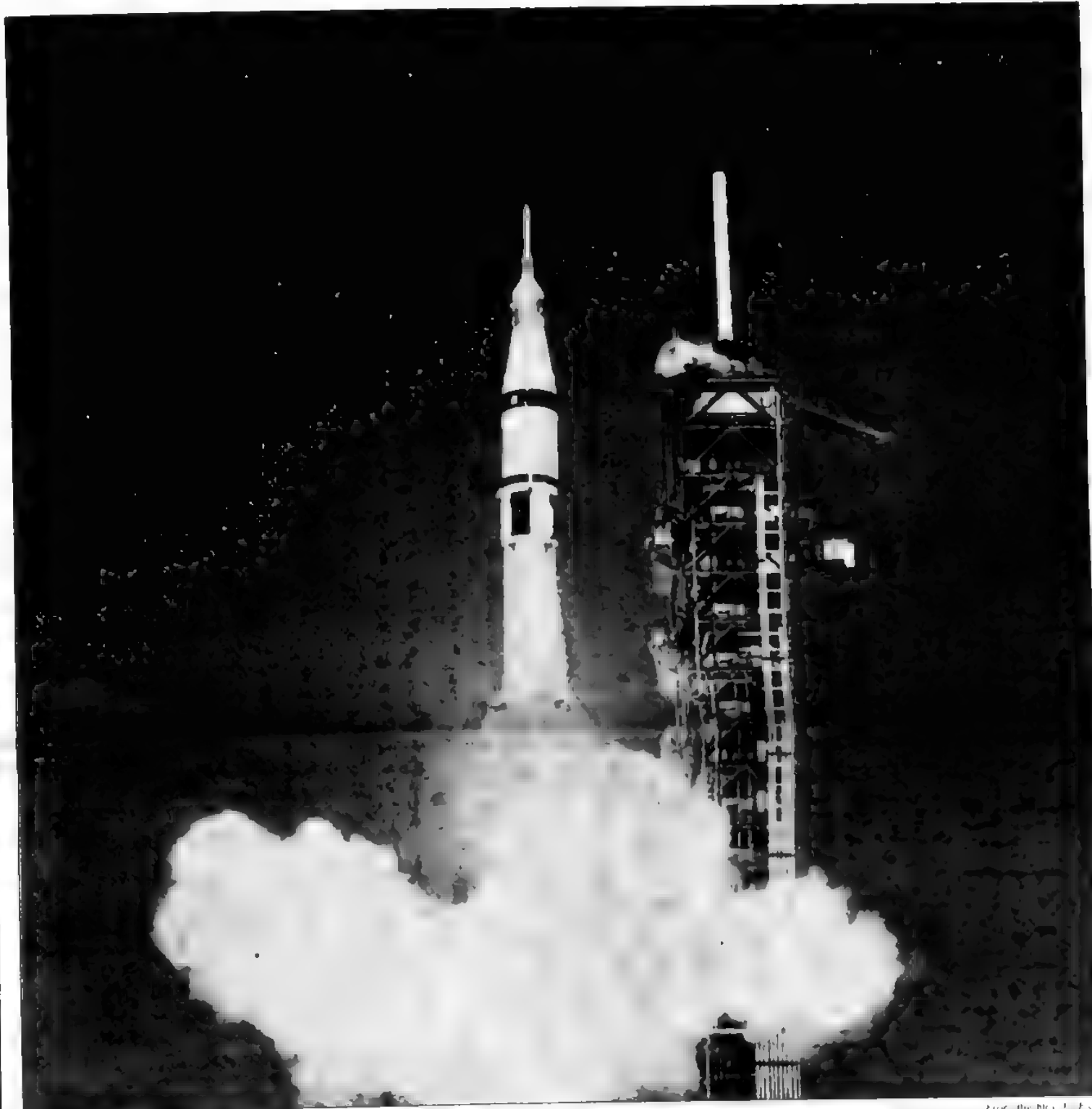
4



5 10:30 a.m. to 4:30 p.m. *Members' Origami Workshop.* Education Hall. Reservations required. (See article page 5.)
1:00-4:30 p.m. *Traditions of Haiti* People Center. Free

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 6, No. 1 January 1982



To Fly!

Opens Thursday, February 11, Auditorium
Special Members' Previews: Saturday and Sunday, February 6 and 7
See coupon page 2

Imagine yourself in what you thought was an ordinary movie theatre. Suddenly the movie explodes onto a screen four stories high and sixty-six feet across!

You soar through the Grand Canyon, glide across Niagara Falls, float off the volcanic cliffs in Hawaii with a hang glider, rip through the sky on the belly of an F-4 reconnaissance fighter jet

This is *To Fly*, the film seen by record-number crowds at the Smithsonian in Washington, D.C., and the first film to be shown on NATUREMAX, the Museum's extraordinary, new, large-format film system. It is the only

system of its kind in the northeast, and one of twelve in the world. The enormous screen fills the vision of the viewers so they actually feel as though they are there

Projecting the image onto the screen requires a huge projector. The reel unit holding the film weighs 1500 pounds; the projector itself is as big as a Cadillac

When the Museum first opened 112 years ago, Trustee William Blodgett commented that to make the information in a natural history museum interesting, "We must sprinkle our whole-some bread with a little sugar." This was one of the factors that inspired the

Strap yourself into the Museum's new NATUREMAX THEATER for an extraordinary film experience

magnificent Hall of African Mammals, the display of the huge dinosaurs, whale and meteorites, and now leads us to explore the potential of this "larger than life" film format

Members are invited to special previews of NATUREMAX and the film *To Fly* on the weekend of February 6 and 7. To order tickets, please use the coupon on page 2.

Upcoming Members' Programs

From a look at life on a Chinese passenger train to a symposium on primates with Jane Goodall, Dian Fossey, Biruté Galdikas and Donald Johanson, a number of fascinating programs will be offered this spring for Members and their guests

Page 3

Special Spring Courses

Archeology, anthropology, whale-watching and behind-the-scenes visits with Museum scientists are just some of the courses offered this spring by the Department of Education

Pages 5-7

Gentle Giants

Join Dr. Roger Payne as he discusses his current whale research in a lecture illustrated with slides and recordings

Page 4

All Aboard!

A train ride through China, from Wuchang to Beijing, provides an in depth look at the people of China and our cultural differences

Page 4

Monsoons and Dunes

Two new natural history films studying unique environments make up a weekend film program for all ages

Page 2

New Natural History Films

Saturday and Sunday, January 9 and 10
2:00 to 4:00 p.m. Auditorium



Peace River Films

Two films, each exploring the fragile ecological systems of a particular environment, make up a film program of *New Natural History Films*. The films, sponsored by the Department of Education, are free and will run both Saturday and Sunday at the following times:

2:00 p.m. *Birds of the Indian Monsoon*. On the plains of northern India lies Bharatpur Sanctuary, an eleven square mile reserve of marsh and woodland. In spite of its small size, few places in the world can parallel it in richness and diversity of bird species to observe. During the wet months, from June to September, thousands of storks, egrets, spoonbills, and cormorants nest in huge, noisy colonies. In winter, Bharatpur is a haven for countless ducks, geese and waders escaping from the cold of the Himalayas and northern Asia. All the species of eagle occurring in Europe can be seen in

Bharatpur and it is the only known wintering ground of the endangered Siberian Crane.

Birds of the Indian Monsoon follows the lives of Bharatpur's birds for one year. It shows how birds and other wildlife cope with the drought of a failed monsoon, and how the Sanctuary miraculously surges with life again when the rains finally return.

3:00 p.m. *The Sea Behind the Dunes*. A salt water bay on Cape Cod is the subject of this year-long portrait of an eco-system. This habitat where salt water, fresh water and land come together is rich in life forms. The film examines the life of the place from the microscopic plankton to the fish, seals and large flocks of migratory birds. It deals with weather, the change of seasons, the action of the tides and how all these forces influence the land, the water and the life forms they support.

ROTUNDA

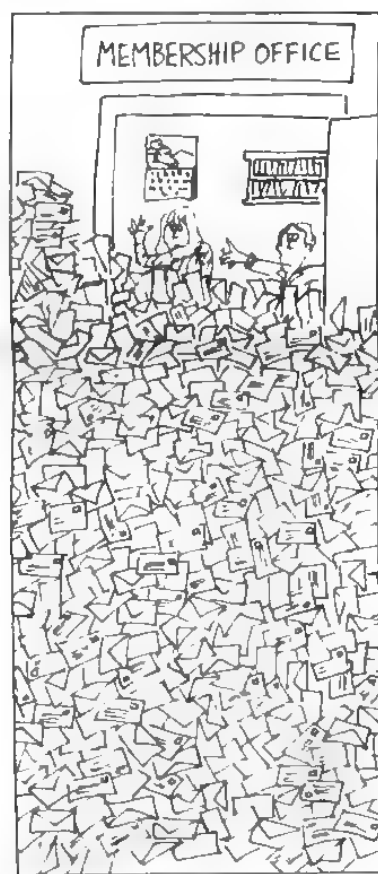
ISSN 0194-6110

Vol 6, No. 1
January 1982

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
James Budenholzer — Copy Editor
Alan P. Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y. 341

Members' Memo



Debra Califf

Special Programs

The Museum offers a wide variety of events and programs throughout the year. These programs are designed to enhance your knowledge and enjoyment of the worlds of anthropology and natural history. In so doing we hope they provide an added dimension to the understanding of our fabulous collections and exhibitions.

Most programs at the Museum are presented by either the Department of Education or the Membership Office. The Department of Education organizes the *Margaret Mead Film Festival*, both the fall and spring *Afternoon and Evening Lecture Series*, the *Workshops for Young People*, as well as films, lectures, and special performances. All of these programs are open to Members and non-members alike. Many of them are free,

but if there is a fee, Members usually receive a discount.

The Membership Office sponsors a myriad of programs, too. We try to have one Weekday Evening Program and one Weekend Family Program every month (except during the summer when we like to go to the beach too!). In addition, we offer Behind-the-Scenes Tours of the scientific departments, highlight tours of selected halls, field trips, and of course special previews and receptions for major exhibitions and openings of new halls. (See the listing of Upcoming Programs for this spring on page 3.)

New Ticketing Policy

In the past year we have instituted some new policies for Membership programs, and I would like to review them at this time.

- In the past, your Membership card was your ticket of admission to most of our free programs. Since the attendance at these has quadrupled in just three years, we now find it necessary to have advance ticketing. This is the only way that we can assure everyone a seat. We realize, however, that advance ticketing means more coupons in *Rotunda* and more postage for you. Please feel free to send all your coupons in the same envelope — and to send one self-addressed, stamped return envelope — but please mark clearly on the envelope all of the programs for which you are registering. Also, for the sake of our accounting, when you are enclosing your payment, send a separate check for each program.

In the February issue of *Rotunda* we will announce a special weekend ticket center where you can drop off coupons and pick up tickets in person.

- Traditionally, the monthly Evening and Weekend prog-

rams have been free to Members. However, the rising cost of speakers and performers (such as Stephen Jay Gould or Roger Payne) has forced us to charge for a few of these programs. We believe it is more important to charge for certain speakers than to pass up the opportunity to have them for lack of funds.

- Sold out. Increasingly we have had to turn away Members from our programs. We hate to do this, but sometimes it is unavoidable. It is our policy to try to add additional programs when a lecture is substantially oversubscribed. But it isn't always possible. And it makes us doubly frustrated on the day of the lecture to find that we have a number of empty seats caused by no-shows. We try to predict a certain no-show rate and act accordingly. Please do not ask for more tickets than you know you will use. And call us, as soon as possible, if you have a cancellation to make. We always have a waiting list.

If you feel you have been turned away from many programs you would have liked to attend, let us know so we can make special arrangements for you the next time a program comes up.

Rotunda is your most important source of information about programs at the Museum. Refer to it every month for program information, and always send away your coupons as soon as possible. Most of our programs are now advertised more than a month in advance, so if you send in your coupons immediately you should not have a problem.

Finally, we love to hear feedback about our programs. If you like (or dislike) any programs in particular, or if you have suggestions for speakers, please let us know.

Henry Schulson

Coupon for To Fly

See article page 1.

Special Members' Previews of *To Fly* February 6 and 7. This program is open only to Participating, Donor and Elected Members.

Please indicate a first, second and third choice:

Saturday, February 6	Sunday, February 7
_____ 10:30 a.m.	_____ 10:30 a.m.
_____ 11:30 a.m.	_____ 11:30 a.m.
_____ 1:30 p.m.	_____ 1:30 p.m.
_____ 2:30 p.m.	_____ 2:30 p.m.
_____ 3:30 p.m.	_____ 3:30 p.m.

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *To Fly*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Upcoming Members' Programs

Join us for another season of exciting and educational programs.



AMNH

Evening Members' Series

Voyagers' Saturn and Jupiter

Wednesday, January 20, 7:30 p.m. Auditorium. Free and open only to Members (see article page 4). Tobias Owen, a member of the NASA scientific team, will use slides, film, and computer simulations to discuss the discoveries of the Voyager missions.

Gul Dao — On The Way: Round Trip to Beijing

Wednesday, February 17, 7:30 p.m. Auditorium. Free and open only to Members (see article page 4). This film, one of the highlights of last year's Margaret Mead Film Festival, provides a fascinating look at life on a passenger train travelling from Wuchang to Beijing. At the end of the film, Dr. Yin Hongfu, a visiting scientist from the People's Republic of China, will answer questions about life in China today.

Scientists in the Field

Wednesday, March 24, 7:30 p.m. Auditorium. Free and open only to Members. Jay Cole from the Department of Herpetology, Judith Winston from the Department of Invertebrates, and Malcolm McKenna from the Department of Vertebrate Paleontology, will present an illustrated program on their recent field research.

The Storytellers

Wednesday, April 21, 7:30 p.m. Auditorium. \$2.50 for Members, \$5.00 for non-members. Jackie Torrence, The Story Lady, will spin "tall tales," "Jack tales," and other stories of the Southern United States, while Laura Simms weaves myths and stories from around the world.

Weekend Members Series

Whales: Their Behavior and Culture

Sunday, January 17, 12:00 and 3:00 p.m. Auditorium. \$3.50 for Members, \$6.50 for non-members (see article page 4). Noted whale biologist Roger Payne will use slides and tape-recordings to discuss his past and present research on the great whales.

Members' Previews of NATUREMAX: To Fly

Saturday and Sunday, February 6 and 7, all day. Auditorium. Free and open only to Participating, Donor, and Elected Members of the Museum. (See article page 1).

The Indian Girl and the Cactus

Saturday, February 27, 11:00 a.m., 1:30 and 3:30 p.m. Free to Members, \$2.00 for non-members. Education Hall. Wunderlee and Wilson's puppets use the lore of the Papago Indians to present a musical play about plant and animal life of the Southwest (geared for young children).

The World of Animals

Sunday, March 28, 11:00 a.m., 1:30 and 3:30 p.m. Education Hall. Free to Members, \$2.00 for non-members. Wildlife lecturer Bill Robinson will bring along a 10-foot Burmese python, a pelican, an armadillo, and other unusual members of the animal kingdom to illustrate the unique ways animals adapt for survival, and the importance of animals in the balance of nature.

Going Batty

Saturday, April 24, and Sunday, April 25, 12:00 and 3:00 p.m. Education Hall. Free to

Members, \$2.00 for non-members. Canada's Touring Museum for Children, creators of one of last year's most popular programs is back with a new program about bats. This program is especially suited for the 4- to 6-year old age group.

Special Members' Programs

Apes and Humans: Pathways in the Search for Human Origins

A major symposium with Jane Goodall, Dian Fossey, Biruté Galdikas and moderated by Donald C. Johanson. Saturday, May 15. Hunter College Auditorium. Times and ticket prices to be announced in the March issue of *Rotunda*. Dr. Goodall, Dr. Fossey and Dr. Galdikas will discuss their current research on chimpanzees, gorillas, and orangutans, respectively, and the implications of this research on the understanding of human evolution. This symposium is presented in cooperation with the L.S.B. Leakey Foundation.

Urban Explorations Join Sidney Horenstein on natural history tours of the urban landscape.

Behind-the-Scenes Tours of the Museum's scientific departments.

Membership Highlights Tours of some of the Museum's most popular halls (For the February Tours see article page 10.)

All the programs on this page will be featured in future issues of *Rotunda*, usually a month before the program date. Be sure to check *Rotunda* every month for program information and registration coupons.

Dinizulu's Africa

Sunday, January 31, 2:00 p.m. Auditorium

Bringing dance, rhythm and song from all over Africa, the Dinizulu Dance Company will present a narrated dance concert at the Museum. The program, focussing on traditional African cultures, will include pieces that range from a Fanga, a Liberian dance of welcome, to the lively Gumboot, the dance of the mine workers in South Africa.

The company is a troupe of vibrant young Africans, born in America and Africa, who above all love the colorful dances of their ancient kingdoms. They study them, and enjoy presenting the lore with

all of its fire and rhythm. The oldest African dance company in the United States, they have received high acclaim performing here and abroad for all ranges of audience. Thousands of American school children of all cultural and ethnic backgrounds have received their first authentic introduction to African culture with the Dinizulu Dance Company, and this is their third performance at the Museum.

The program, sponsored by the Department of Education and a gift from Evelyn Sharp, is free to all Museum visitors.

Ritual Running

Wednesday, January 27, 7:00 p.m. Auditorium

In the 1860s a single Mesquakie runner ran more than 400 miles to warn Sauk Indians along the Missouri River of an enemy attack. His name wasn't recorded, but he is said to have been in his mid-fifties.

In 1900, Alexander S. Shepherd hired Tarahumara *cargadores* to haul an upright piano through the mountains. Three sets of men, spelling each other every half-hour, took more than two weeks to make the trip. They ran the 185 miles home in three days.

At Cottonwood Island, Nevada, a runner who used "the old way" left his friends one morning to run to the mouth of the Gila River in southern Arizona. He didn't want anyone else along, but when he was out of sight, the others began tracking him. Beyond the nearby dunes his stride changed. The tracks "looked as if he had been staggering along, taking giant steps, his feet touching the ground at long regular intervals, leaving prints that became further and further apart and lighter and lighter in the sand." When they got to Fort Yuma they learned that he had arrived at sunrise of the same day he had left them.

Ritual running by Native American cultures has fascinated outsiders since Hernando Cortes encountered it in Mexico. He wrote that within 24 hours of his landing at Chianiztlan, word had reached Montezuma 260 miles away — via runners — of his arrival. Indian running had both practical and ritual uses: to deliver a message, to raise a rebellion, to drive out ghosts, or to keep the stars in place.

Peter Nabokov, a research associate at the Museum of



A Yuman runner from the Colorado River region about 1884

the American Indian and author of the book, *Indian Running*, will participate in a program entitled *I Become Part of It. Running and Being in the Native American World*. The program, emphasizing the tribal traditions of running and the mythology that surrounds them, corrects some misinterpretations by European observers and provides some insight into this practice.

The program will include the film, *Walking in a Sacred Manner*, which will be introduced and discussed by Joseph E. Brown, Professor of Religious Studies at the University of Montana. The program is presented by the Department of Education in cooperation with the Society for the Study of Myth and Tradition, and will be free to all Museum visitors.

The Great Whales

Sunday, January 17,
12:00 and 3:00 p.m. Auditorium
\$3.50 for Members, \$6.50 for non-members

Members are invited to join Dr. Roger Payne, research zoologist with the New York Zoological Society, who has pioneered the research of the great whales, as he discusses the behavior of these gentle giants, as well as the current trends of research

The past five years have seen an explosion in new understandings of whale behavior, and have led to much speculation as to their "cultural traditions." Dr. Payne will discuss the remarkable sounds and behavior of the right whales, including their surprising forms of play. He will describe how humpback whales blow air bubbles in a number of ways to entrap their prey, and he will illus-

trate how the male humpback must show skill in singing as well as fighting to win a mate. Dr. Payne will use slides and recordings of whales to illustrate his lecture. The program is presented in cooperation with the L.S.B. Leakey Foundation.

This program was originally advertised in the December issue of *Rotunda*. As of press time, a few tickets were still available. Please call (212) 873-1327 for ticket availability.

Humpback whales blow bubbles into a "net" to concentrate small fish and krill, then surface through it and gulp down their meal



Richard Schlecht/National Geographic Society

Whales: Their Behavior and Culture. January 17, 1982.

I would like to order tickets for the program about whales with Roger Payne. Participating, Donor and Elected Members are entitled to four tickets at the Members' price of \$3.50 per ticket. Associate Members are entitled to one. All other tickets are \$6.50.

Please indicate a first and second choice of times (if possible):

12:00 noon

3:00 p.m.

Number of Members' tickets	-	X \$3.50	\$
Number of non-member tickets	-	X \$6.50	\$
Total Payment enclosed			\$

Name

Address

City: _____ State: _____ Zip: _____

Daytime phone

Membership category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Whale Program, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After January 8, call (212) 873-1327 for ticket availability. Early reservations are strongly advised.

The Voyagers' Saturn

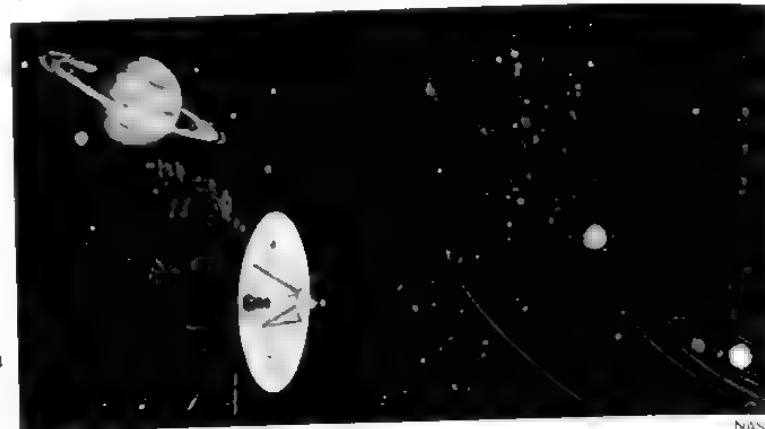
Wednesday, January 20, 7:30 p.m. Auditorium
Free and open only to Members

Members are invited to join Dr. Tobias Owen, Professor of Astronomy at the State University of New York and a member of the NASA scientific team, as he discusses the astounding discoveries of the Voyager missions to Jupiter and Saturn. Highlights of the missions range from the discovery of new satellites orbiting Saturn to finding a thin ring circling Jupiter. In one week more information was learned about Saturn than in all previously recorded history. To illustrate his talk, Dr. Owen will use spectacular slides, movies of images transmitted

back by the two spacecraft, and computer simulations of the flybys.

This program was originally advertised in the December

issue of *Rotunda*. As of press time, a few tickets were still available. Please call (212) 873-1327 for ticket availability.



NASA

Train to Beijing

Wednesday, February 17, 7:30 p.m. Auditorium
Free and open only to Members

National Film Board of Canada



One of the highlights of the 1981 Margaret Mead Film Festival was the premiere of the film *Gui Dao - On the Way. Round Trip to Beijing*. The film captures life on a passenger train travelling from Wuchang to Beijing, a journey of 12,000 kilometers.

Members are invited to a special screening of this film at our February Members' Program. At the conclusion of the film Dr. Yin Hongfu, of the People's Republic of China and a visiting scientist in the Museum's Department of Invertebrates, will answer questions about life in China today.

The film compresses twenty hours of travel into a series of striking scenes. Prior to departure, railway workers are shown enthusiastically preparing the train for the overnight trip, oblivious to the monotony of their tasks. The film focuses on Team No. 6, made up of women who act as stewardesses, tending to the passengers' needs. Their leader, Wang Shaoying, urges them to give the best possible service. At the end of a long shift, we see Wang Shaoying

as she returns to her home in Wuchang where her two children, husband, father and brother are expecting her. We listen to her as she discusses their wages, their savings, and her desire to possess a bicycle. Implicit throughout the film is

the suggestion that much of what we take for granted in the United States is simply non-existent in China today.

The program is free and open only to Members of the Museum. Please use the adjacent coupon to order tickets

Gui Dao - On the Way: The Road to Beijing. February 17, 1982. This program is open only to Members of the Museum and their guests. Participating, Donor and Elected Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased for \$3.50 each.

Please send me _____ tickets.
Additional tickets at \$3.50 each.

Name

Address:

City:

State: _____ Zip: _____

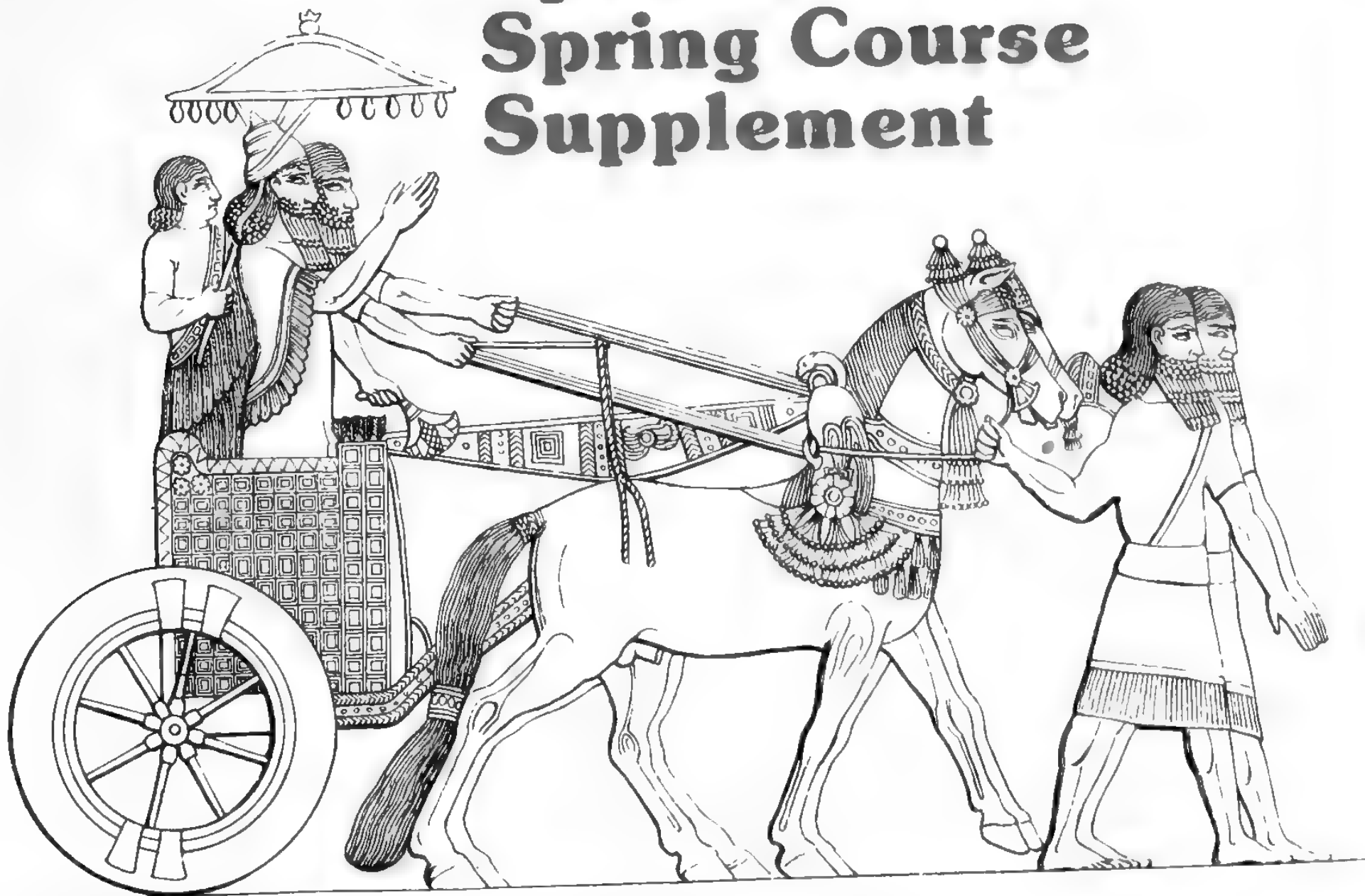
Daytime phone

Membership category

Please mail with a self-addressed, stamped envelope to *Road to Beijing*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After January 22, please call (212) 873-1327 for ticket availability.

The Department of Education presents their

Special Spring Course Supplement



Lost Cities

Six Tuesday evenings starting February 23, 7:00-8:30 p.m. Fee: \$35 (\$31.50 for Members).

Greek myths that survive in Christian monasteries, and pyramids bear witness to Egyptian civilization, but only archeology reveals the extraordinary life of the lost cities of Mesopotamia, Assyria and Persia. Excavation has exposed not only royal tombs with human sacrifices and eagle-headed genii in solemn, stone-frozen ritual, but also clay tablets that divulge the passionate voices of vanished peoples. Dr. Claireve Grandjovan, Professor of Classics at Hunter College, explores the beginning cities and discusses some of the objects, tales and pictures found in the desert cities that have influenced our world.

Feb. 23 Palm and Reed (6,000-3,000 B.C.) One of the world's greatest civilizations grew in one of its most harsh environments: salt-laden earth, disastrous floods, the absence of stone and timber with which to build, and desert waiting at the edge of the marsh. Extraordinary inventiveness led to the first cities and temples.

Mar. 2 Ur (2,500 B.C.) The Sumerians, whose great dark eyes look out so hauntingly from statuettes set at the feet of their gods, also left delicate jeweled flowers, erotic songs, epics and the remains of their legendary Cities of the South.

Mar. 9 Mari (1,760 B.C.) When Zimri-lim built his painted palace in the brilliant and already ancient city of Mari, even Hammurabi wrote him about it.

Mar. 16 Nineveh (700 B.C.) The Bible tells of Assyrian warlords dressed in blue and scarlet, whose chariots raced through dusty villages, and whose battering rams no city could withstand. Now archeology has revealed the blue and scarlet robes in throne-room frescoes, the battles and banquets and winged bulls of might exquisitely carved on the walls of fortress palaces and, most valuable of all, tablets of the royal archives.

Mar. 23 Babylon (550 B.C.) One of the wonders of the world, a city of astronomers, of towers, of hanging gardens, Babylon grew so great that, when it fell, those within its interior were not even aware of armies entering the hundred bronze gates and marching along its ceremonial ways.

Mar. 30 Persepolis (450 B.C.) The conqueror of Babylon came from a land without cities. Forts, vil-

lages and tents sufficed for its warriors, farmers and herdsman. Yet at the heart of their gigantic empire, the Persian kings built dazzling pavilions of stone on which their subjects still climb the grand stairways portrayed in festive procession.

Anthropology Through Films

Six Monday evenings starting February 22, 7:00-9:00 p.m. Fee: \$40 (\$36.00 for Members).

What do Alaskan Eskimos, an elaborate royal court dance in Java, men in a Utah prison, an Australian Aborigine, Jewish immigrants in America and a paramount chief in West Africa have in common? All are featured in six evenings of unusual films providing insight into cultural behavior. Introduced and discussed by Dr. Malcolm Arth, anthropologist and Curator at the Museum. On several evenings he is joined by special guests.

Feb. 22 Three Dances by Gulpilli (1978) David Fraser. (7 mins.) An Australian Aborigine performs exquisite mime animal dances.

Free Voice of Labor - The Jewish Anarchists (1980) Steven Fischler and Joel Sucher. (55 mins.) Part of the American immigrant experience at the turn of the century recalled by those who lived it.

Mar. 1 Bekasan Menak (1977) William R. Heick and Gordon Mueller. (19 mins.) Two princesses in exquisite costume are portrayed in a Javanese dance-drama of their struggle for the love of a king.

In Spring One Plants Alone (1981) Vincent Ward. (45 mins.) An elderly Maori woman cares for her disturbed middle-aged son in a handsomely photographed documentary. Special Guest: Rohama Lee Editor of Film News for more than thirty years, Ms. Lee shares her insights about documentary filmmaking and criticism.

Mar. 8 Sherea: Dispute Settlement at the Court of the Paramount Chief in N'zara, North Togo (1975) Emile van Nieuwaal and Els van Nieuwaal. (23 mins.) Settling a dispute between a man and his wife whom he accuses of adultery.

Waiting for Harry (1980) Kim McKenzie. (57 mins.) Final mortuary rites for an Australian Aborigine re-

vealing elaborate religious beliefs and the relationship of a group with an anthropologist.

Mar. 15 Courts and Councils (1981) Ron Hess (30 mins.) Traditional and modern ways of settling a dispute in India. Special Guest: Ron Hess.

The Performed Word (1981 Premiere) Gerald L. Davis (60 mins.) Special Guest: Dr. Gerald L. Davis.

Mar. 22 The Hide Out (1981) Brian Patrick (83 mins.) The insider's view of prison life, with a rare glimpse of deliberations in a parole hearing. Special Guest: Brian Patrick.

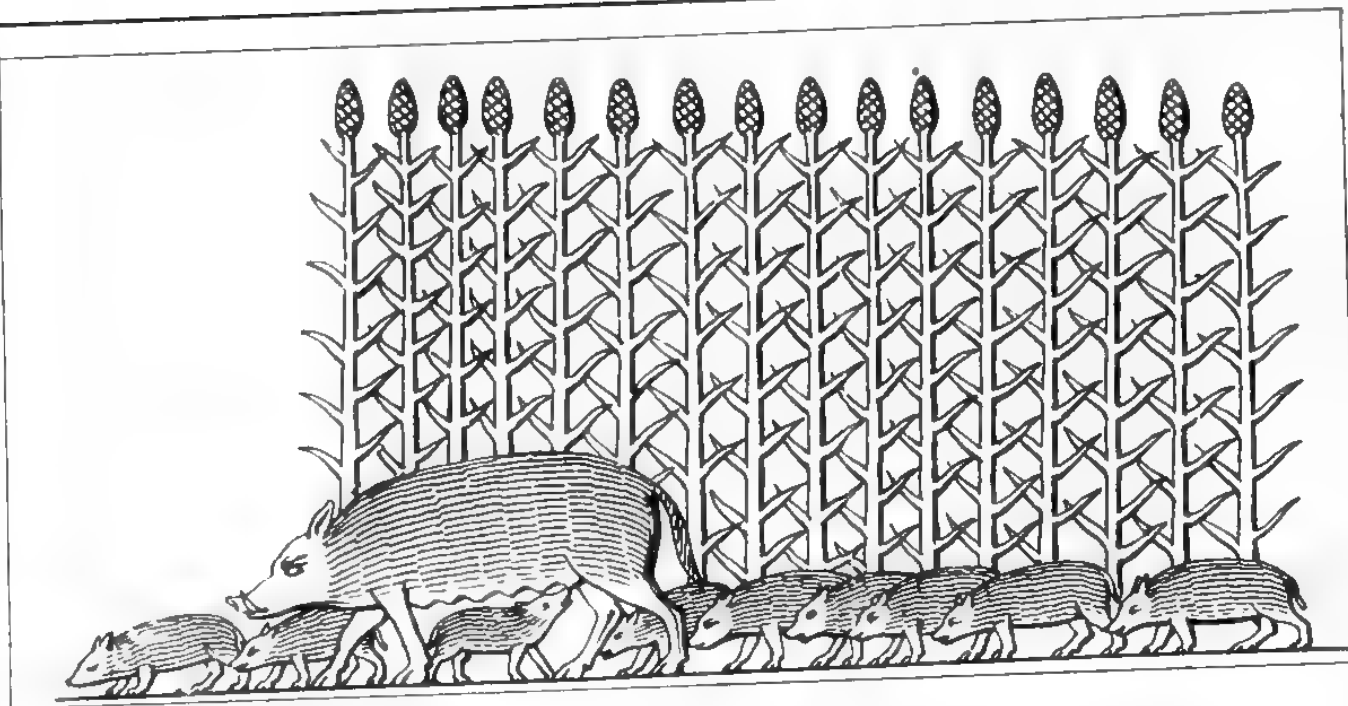
Mar. 29 Dance of the Yukon Delta (1981) Premiere Sarah Elder and Leonard Kamerling (60 mins.) Dance, music and values of an Eskimo village. Special Guests: Sarah Elder and Leonard Kamerling.

The World of Islam

Six Monday evenings starting February 22, 7:00-8:30 p.m. or six Tuesday afternoons starting February 23, 2:30-4:00 p.m. Fee: \$35 (\$31.50 for Members).

Paul J. Sanfacon, Lecturer in Anthropology at the Museum, discusses the role of Islam in the history of the Mediterranean world and the Middle East. Using color slides, his talks cover: The Five Pillars, role of Ayatullah-s and Mullah-s; and the Islamic system of education. Included are discussions of the role of Jews and other minorities in Arab lands, relations between nomadic and sedentary peoples and the daily lives of men and women. The series concludes with consideration of European colonialism and consolidation of national identities of Middle Eastern nations.

- 1 *Beginnings and Spread of Islam* a world religion from Morocco to East Asia
- 2 *Nomads and Town-Dwellers* urban-rural relations and the "Islamic City"
- 3 *Surrender to Allah*: general principles of Islam
- 4 *Men and Women in Muslim Societies* stereotypes verses reality.
- 5 *Islamic Education*: history and comparisons with Europe
- 6 *The Colonial Period and Today*: British, French, and American spheres of influence



Animal Life in Northeastern United States

Six Monday afternoons starting February 22, 2:30-4:00 p.m. Fee: \$35 (\$31.50 for Members).

The New Jersey Pine Barrens, the Adirondacks of New York, and remote areas in New England are home to an exciting variety of wildlife species. These include beautiful salamanders and tree frogs, big game mammals such as moose and black bear, over 200 species of birds, a snake that is more adept at faking than the opossum — and the opossum itself. By means of color slides and recordings, this series introduces these animals, and discusses where they may be found. **Kenneth A. Chambers** is Lecturer in Zoology at the Museum, and author of *A Country's Lover's Guide to Wildlife*.

Feb. 22 *Living Jewels: frogs and salamanders.*

Mar. 1 *Reptiles in Fact and Fiction: turtles, snakes and lizards.*

Mar. 8 *Birds of the Seashore and Wetlands.*

Mar. 15 *Birds of the Woods and Open Fields.*

Mar. 22 *Bats and Other Small Mammals.*

Mar. 29 *Bears, Beavers, and Bobcats: the larger mammals.*

Insects: Earth's Most Successful

Animals. Six Thursday evenings starting February 25, 7:00-8:30 p.m. Fee: \$35 (\$31.50 for Members).

Informal slide-illustrated talks introduce the fascinating world of insects. **Alice Gray**, Museum Associate in the Department of Entomology, discusses structure, life histories, environmental relationships, and the significance of insects to man.

Feb. 25 *Insects and Their Place in the Animal Kingdom: introduction, basic anatomy, history, and present diversity; factors contributing to success.*

Mar. 4 *The Private Lives of Insects: how they grow, molting and its control, life histories and social behavior.*

Mar. 11 *Bed and Board: insect habitats; food and feeding, shelter problems, reproductive potential and population fluctuations.*

Mar. 18 *Hazards of Insect Life: survival responses to competition, disease, predators and climate.*

Mar. 25 *The Senses of Insects: how they are studied, communication among insects.*

Apr. 1 *Insects and People: harmful and beneficial aspects; how man affects the insect world; some thoughts on peaceful coexistence.*

Foraging for Dinner. Identifying, Collecting and Preparing Wild Foods.

Six Monday evenings starting February 22, 7:00-8:30 p.m. Fee: \$35 (\$31.50 for Members).

Get to know the wild plants that have been used for food by people throughout the ages. In this series of lectures supplemented with slides and demonstrations, plants are examined, their cultural history noted, and methods of preparing the more common ones are shown. **Dr. Helen Ross Russell**, author of the book, *Foraging for Dinner*, has led scores of wild food forages in the metropolitan area.

Feb. 22 *Philosophy of Foraging: modern foragers; conservation and responsibility; techniques for plant identification; a special look at the rose family.*

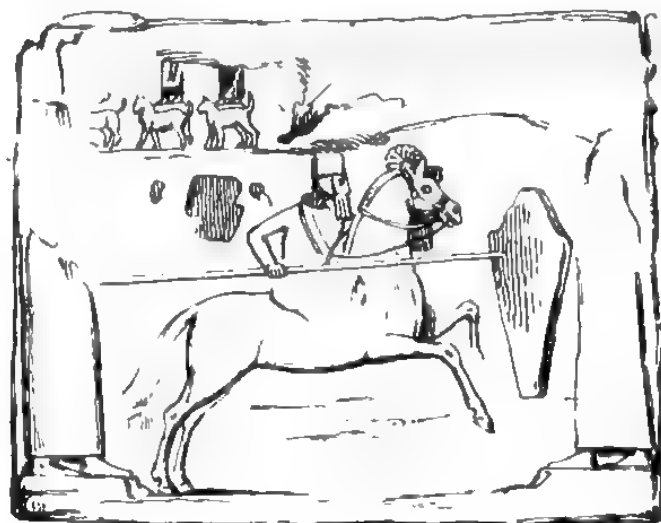
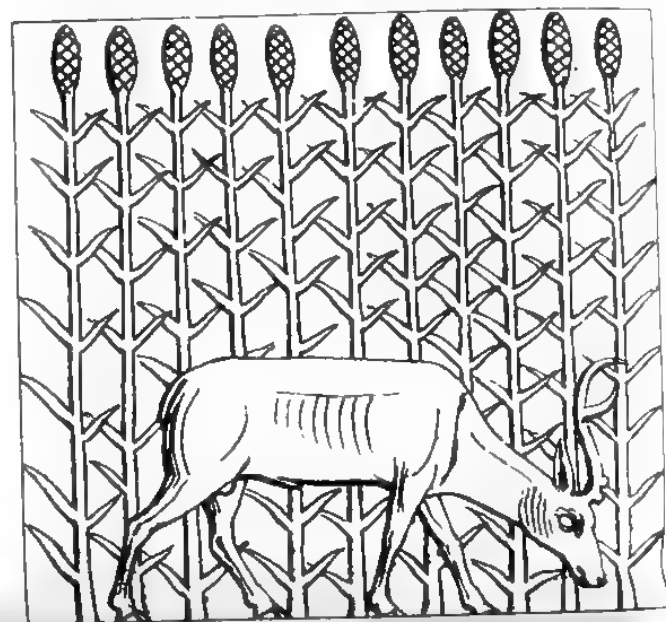
Mar. 1 *Dangers and Benefits of Foraging: types of plant poisoning; edible nightshades, mushrooms, sumacs, and poisonous beans.*

Mar. 8 *Cooking, Beverage Making, and Preserving providing for tomorrow; plants appropriate for each technique.*

Mar. 15 *Flowers in Your Cookpot: using ornamental plants for food; common, easily identifiable specimens.*

Mar. 22 *That Weedy Garden! Learn to identify and prepare edible wild plants that flourish in gardens.*

Mar. 29 *Wild Plants in North and South American History: their contributions to Native American cultures and to the cookpots of early settlers.*



Whales, Dolphins and People.

Six Thursday evenings starting February 25, 7:00-8:30 p.m. Fee: \$35 (\$31.50 for Members).

Cetaceans have become increasingly important to us in recent years, as we realize not only that they are among the largest and most interesting animals that have ever lived, but that some of them are among the most endangered. **Richard Ellis**, author and illustrator of *Book of Whales*, has been concentrating on cetaceans since he worked on the mighty blue whale model that hangs in the American Museum's Hall of Ocean Life. He is a member of the U.S. Delegation to the International Whaling Commission.

Feb. 25 *Adventures of a Whale Painter: travels to Newfoundland, Hawaii, Baja California, Patagonia, and Japan, in search of whales. Illustrated with slides and the author's paintings.*

Mar. 4 *The Great Whales: blue, fin, humpback, gray, right, bowhead, minke, sperm.*

Mar. 11 *Harpooned: the history of whaling from the earliest aborigines to Europe, the U.S. and Japan.*

Mar. 18 *Porpoises and Dolphins: the smaller cetaceans, from harbor porpoises and freshwater dolphins to bottlenose dolphins and killer whales.*

Mar. 25 *Intelligence and Training: communications, language, training techniques, potential for the future.*

Apr. 1 *Fate of the Whales: Will they survive? Recent developments in conservation, reduction in whale quotas, International Whaling Commission.*

Mushrooms, Mosses, Ferns, and Other Non-Flowering Plants.

Five Monday afternoons starting February 22, 2:30-4:00 p.m. or Five Tuesday evenings starting February 23, 7:00-8:30 p.m. Fee: \$30 (\$27.00 for Members).

The non-flowering plants range from microscopic bacteria to gigantic kelps and conifers. Included are some of the choicest edible plants, as well as some of the deadliest. This series of slide-illustrated talks introduces diverse plants: mushrooms, mosses, ferns of forest floors and meadows; lichens of rocky and sandy places; algae at the edge of the sea; and conifers. Identification and ecology of northeastern U.S. species are stressed. **Helmut Schiller** is Lecturer in Botany at the Museum.

1. *The Non-Flowering Plants: basic structures and relationships.*
2. *Seaweeds.*
3. *Mushrooms.*
4. *Lichens, Mosses, Ferns and Relatives.*
5. *Gymnosperms: Conifers and Relatives.*

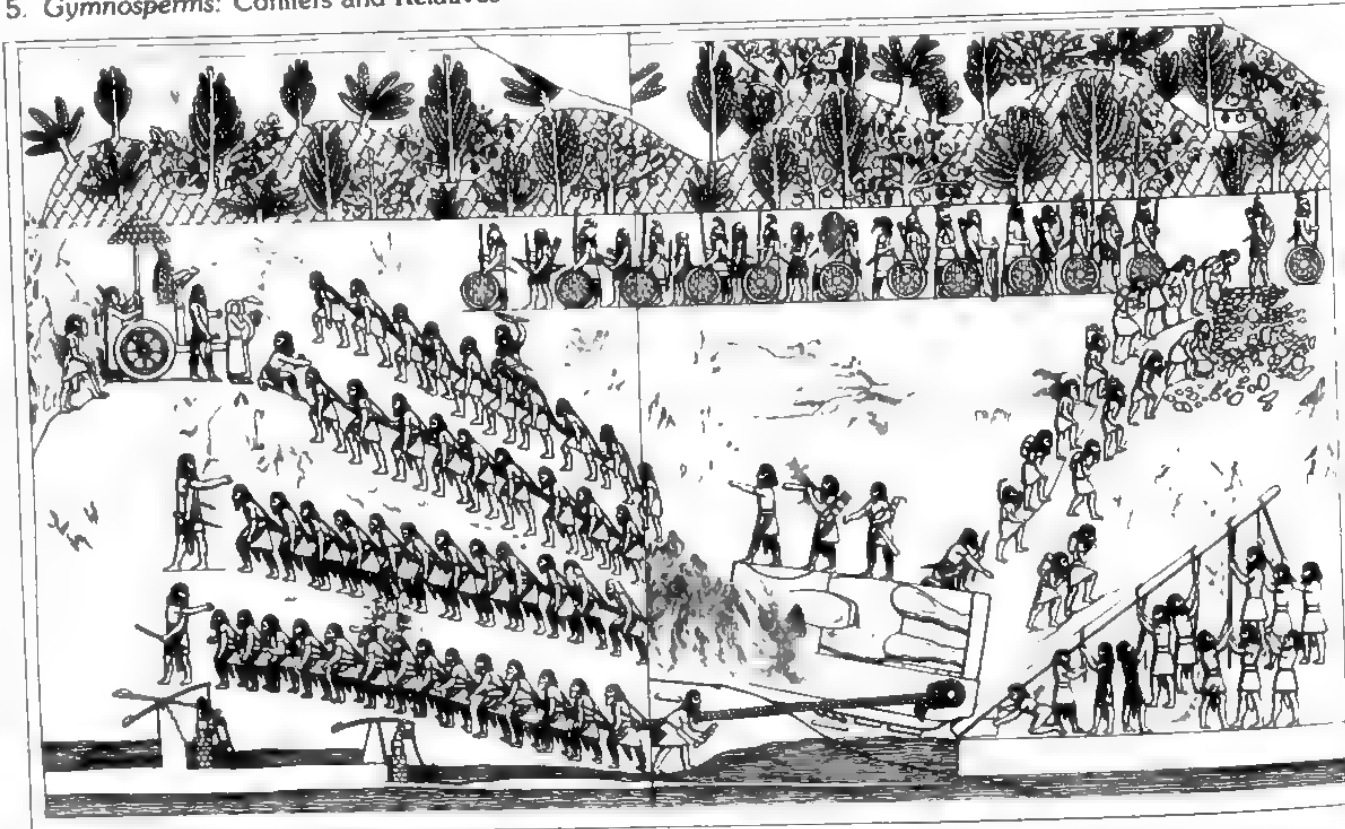
Animal Drawing

Eight Monday evenings starting March 1, 7:00-9:00 p.m. Fee: \$75 (materials not included). Limited to 25 Persons.

Join us as we sketch gazelles of the African Plains, or draw timber wolves of the snowbound north.

Using exhibition halls after the Museum has closed to the public, students draw from realistic habitat groups as well as mounted specimens. **Stephen C. Quinn**, Senior Principal Preparator-Artist in the Museum's Exhibition Department, will discuss drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Different media and techniques are explored. Individual guidance is given to each participant from beginner to experienced artist.

The following exhibition halls will serve as our studios: The Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, and the Hall of Ocean Life.





Urban Wanderings. Three half-day walks in Manhattan starting March 7, 10:00 a.m. Fee: \$20. Limited to 40 persons.

Sidney S. Horenstein of the Museum's Department of Invertebrates will lead the following walks:

Mar. 7 Fossils of 42nd Street: fossils and other geologic stories in the building stone of New York.

Mar. 28 Geology & Nature of Roosevelt Island: a close look to see why it is in the middle of the East River, and to investigate the wildlife it supports.

Apr. 18 Lower Manhattan: tracing the original shoreline and interpreting the scenery of New York Harbor.

Explore Weaving I. Six Thursday evenings starting February 25, 7:00-9:30 p.m. Fee: \$85. Limited to 22 persons.

In the past century archeologists have become increasingly aware of the antiquity and importance of weaving throughout the world. Phyllis Mandel, weaver and Lecturer in Anthropology at the Museum, leads participants in fundamental textile techniques. Workshops also include lectures illustrated with beautiful color slides, and demonstrations of looms from Africa, Asia, and Americas, and the Pacific Islands. Participants complete three weaving projects, using simple equipment, for which all materials are provided.

Explore Weaving II. Supplementary weft patterning five Monday evenings starting February 22, 7:00-9:30 p.m. Fee: \$100 (includes equipment and materials). Limited to 15 persons.

The very beautiful "supplementary weft" patterning technique is utilized in textiles from regions as diverse as Central America, West Africa and Southeast Asia. This advanced-level course provides an opportunity to explore this unique and exciting weave utilizing simple frame looms. Phyllis Mandel, an experienced hand-weaver and Lecturer in Anthropology at the Museum, will use both ethnographic specimens from the Museum's collections and slides to demonstrate the variety of indigenous loom forms which have been used to create these very special textiles. Some weaving experience is an essential prerequisite for this course.

Travel Photography. Six Thursday evenings starting February 25, 7:00-9:00 p.m. Fee: \$50. Limited to 22 persons.

Designed for the traveller who wants to photographically record peoples and places, near and far. Includes what is travel photography, the special problems related to photographing while travelling, basics of camera technology and lighting; proper exposure; selection and use of equipment; and most importantly, how to see photographically. Willa Zakin, professional photographer trained in anthropology, offers lectures, slides and class demonstrations of lighting and camera mechanics. Weekly assignments will be followed by a class critique.

Weekend Field Trips

Weekend for Whale-Watching. June 4-6. Limited to 45 persons.

A field trip to Montauk Point to observe whales in our New York coastal waters. The program includes a day boat trip with researchers from the Okeanos Research Foundation, a private organization studying cetacean (whale, dolphin and porpoise) behavior, population distribution and photographic identification of individual whales. A special evening talk on "Whales and Whaling" will be presented, and participants will join a morning bird and ecology field walk among the dunes of Long Island's most eastern shore. Natural Science Lecturers, Sydney Buffum and Brian Moss from the Museum's Education Department will lead this field study tour. For Weekend Field Trip itinerary and application, call (212) 873-7507.

Weekend for Bird Enthusiasts. May 8, 9.

Two-day bus trip covering a wooded area near New York City, and daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen. Kenneth A. Chambers, Lecturer in Zoology at the Museum, leads this field study tour. (Limited to 36 adults.) For Weekend Field Trip itinerary and application, call (212) 873-7507.

Weekend in Geology. May 15 and 16.

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain there are visits to Sandy Hook and the High Lights of the Navesink. Collecting stops are made enroute. The group is accommodated overnight near Parsippany. Dr. George Harlow, Assistant Curator, Department of Mineral Sciences at the Museum, leads this field study tour. (Limited to 36 adults.) For Weekend Field Trip itinerary and application, call (212) 873-7507.



Visit Museum Curators. Three Tuesday afternoons starting February 23, 2:30-4:00 p.m. Fee: \$25. Limited to 20 Persons.

A behind-the-scenes opportunity to visit the Curators who chair three of the Museum's scientific departments: Florence Stone, Museum Coordinator for Special Programs, will guide the group.

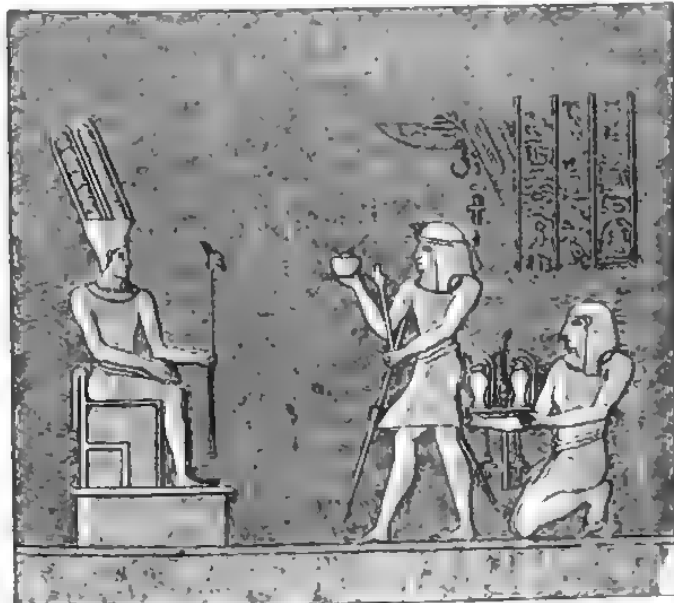
Feb. 23 Department of Vertebrate Paleontology with Dr. Richard H. Tedford, Chairman and Curator.

Mar. 2 Department of Ichthyology with Dr. C. Lavett Smith, Chairman and Curator.

Mar. 9 Department of Ornithology with Dr. Lester Short, Chairman and Curator.

Saturday Field Walks in Botany. Six full-day walks starting April 24, 10:00 a.m. Fee: \$60. Limited to 30 persons.

During the spring blooming period, walks are taken to areas of botanical significance in New York City and vicinity to learn about wild plants, particularly the flowering forms. Identification and ecology of the plants is discussed informally. Helmut Schiller, Lecturer in Botany at the Museum.



I would like to register for the following lecture series

Course(s):

Day(s):

Time

Price (Note that Participating, Donor and Elected Members get a 10% discount on many courses.)

Name:

Address:

City:

State

Zip.

Daytime phone

Membership category

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Afternoon and Evening Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

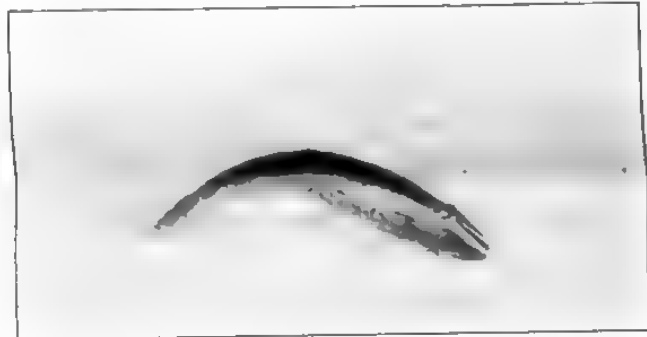
Whale on My Back

Richard G. Van Gelder
Department of Mammalogy

I didn't know I was going to build a whale. Only three or four people in the world have done this, and only two of us are still alive. It isn't something I can recommend. Not too long ago a colleague in Canada called and told me that his museum was planning to build a whale and did I have any suggestions? I had only one — resign now and get yourself a nice university job

The American Museum already had a whale, and there wasn't much wrong with it. Three generations of New York school kids had grown up wondering of it, flinching from its amber-eyed stare, gazing at its striated belly from the floor below, and coming away with awe and the assurance that, "they have a real stuffed whale in there — I seen it with my own eyes."

The old whale was probably the first life-sized big whale on exhibit anywhere, and in it was a lot of history. On no less authority than Roy Chapman Andrews, it was R.C.A. and Jimmy Clark — two young turks at the Museum in 1907 — who solved the problem of how to finish it. They used papier mache. From some old drawings I knew it was built to last — wooden bulkheads surrounded with pipe, chicken wire, lath, plaster of Paris, and the famous papier mache. So far as accuracy was concerned, I couldn't see much wrong with it, mainly because I had never seen a blue whale. Aside from eyes that didn't bulge quite right and may be a bit wrong on color, it was OK with me, and there was nothing that a few hundred dollars and some paint couldn't clear up.



I devised a plan to have a whale hanging from wires

About this time the whale was fifty years old, which is probably more years than a real whale lives, and, so far as I was concerned, it was good for another fifty. The hall it was in — Biology of Mammals — was pretty near fifty years old itself and needed refurbishing. But in the late 1950's there wasn't too much money around for exhibition, most of it being tied up in the Biology of Man Hall, and I was enough involved then with the North American Small Mammal Corridor not to want to start something new.

How I came to build a whale is a story that starts in 1910. Someone got the idea of the Museum's having a great hall in which the huge mammals of the sea (and a few of the bigger fishes) would be exhibited. About 1916 plans were drawn up for the hall, of Brobdingnagian dimensions, beautifully skylit in the mode, with a balcony halfway up the 40-foot walls. In a decade, they actually got the hall built. It was called the Hall of Ocean Life.

Just before the bottom fell out of the market in 1929, the Museum managed to fill some of the cases on the ground floor with habitat groups of walrus, manatees, pearl divers, and elephant seals. A good part of the air space in the center of the hall was filled with a variety of whale skeletons, including four of them that were more than 50 feet long. Some thirty or more smaller whales and dolphins, a replica of a baby sperm whale that had washed up in the Gowanus Canal, a model killer whale, and a few big fish were also hung up. Despite this aerial display, the hall looked empty. Many of the cases on the ground level were still empty and, to fill up the vast vacant floor, various sea items were displayed over the years — a whaleboat, a diving bell, and, I remember from my first visit to the hall as a schoolboy, Lindbergh's sea plane was hanging midst the whales from the ceiling.

In the fall of 1959 the Director called a meeting to plan the completion of the hall. Gordon Reekie from the Exhibition Department, Charlie Breder from

Ichthyology, and I got out the old plans, went over them, and in a few minutes had decided what was necessary to complete the hall. We intended to carry out the original plan which meant hanging a few more skeletons and collecting some more sea lions for the habitat groups. I had visions of a trip to Alaska. There was nothing that called for a life-sized whale in the middle of the hall!

The Director had not been present at the beginning of the meeting, and he arrived just as we were about to quit. In ten minutes he dismembered the whole program. The tidbits that remained from the original weren't worth worrying about. But, while the Director knew what he did not want, he did not have a clear idea of what he did. We were left to come up with a new plan for the Hall of Ocean Life.

In the next few years I resigned from the Ocean Life Committee twice, and once from the Museum, and was nearly fired at least three times — the last being the day before the official opening of the hall in 1969.

My problems were bad enough on the technical part without interference from "Higher Ups." Higher Ups includes everyone above department head — assistant directors, donors, directors, trustees, vice presidents, and presidents.

Higher Ups decided that there would be a huge whale dominating the center of the hall.

I wasn't too much against this, although I still wanted to keep the whale skeletons there, too — very educational. I devised a plan to have a huge whale hanging from the ceiling.

"Nothing must hang from the ceiling," a Higher Up told me.

"Oh, won't it stand the weight?"

"I don't know about things like that — it is just that I don't like things hanging on strings."

"Not strings, sir," I said, "— wires."

"Same thing. Nothing hanging."

So I went back to my office, put my feet up on the desk, and tried to figure out how you can get a whale up in the air without strings. Make it out of rubber and fill it with helium, I thought, but put the idea aside. Too much like Macy's Thanksgiving parade. We would probably have to anchor it with strings, and I didn't know how far the string-ban went.

Back to String-Fellow I went and told him I couldn't figure out how to get the whale up in the air without hanging it.

"Come up with a new idea," I was told.

A challenge. I like nothing better than an intellectual challenge. But I needed more information, so I went back to String-Fellow and asked just what he had against strings and wires.

"Reminds me of the old natural history cabinets," he said.

I, too, could remember from my History of Science course the illustrations of the sixteenth century equivalent of a natural history museum: anything too big to fit in a cabinet was hung from the ceiling — on strings or wires.

"But, sir," I pleaded, "we have modern techniques now. Gordon tells me that by painting the wires dark gray and light gray alternately you can't even see them. No one would know."

"No strings," he said.

I was still trying to figure out how to do it when a new Higher Up appeared. His plan — or his first one — was what I later dubbed the "lolly-pop concept." He wanted to have the whale supported from a pedestal on the floor of the hall, with a gleaming chromium rod, three feet in diameter, piercing its



"Lolly-pop" wanted the whale supported from a pedestal on the floor

belly. His miniature mock-up looked like some of the fighter plane models that I used to have as desk ornaments during the war: a fat-bellied P-40 blasting up into the wild blue yonder. Mr. Lolly-pop was most unhappy when not only I, but his fellow Higher-Ups vetoed his idea. There would have been engineering problems, too.

And so the buck was passed back to me, now by both Stringfellow as well as Lolly-pop.

"Come up with a new idea," they said.

I began to analyze it logically. First of all, I reasoned, we can't have the whale hanging from the ceiling. Secondly, we can't have it off the floor supported by rods. What else is left?

I began to think about the whales that I had seen. Most were nothing more than a bit of fin, a puff of vapor, or a pair of flukes. You just don't see whole whales, except dead ones.

Most photographs of whales are of dead ones — bloated masses on a factory ship deck, or beach-washed carcasses. Of all the people in the world



At a loss for ideas, I proposed the "dead-whale" exhibit

who have seen whales, most of them have seen whales just this way — dead!

When I proposed the dead-whale exhibit it was my plan to force the whole issue out into the open. I wanted to get some of the other Higher Ups involved and perhaps to override Stringfellow so that we could properly hang up the whale.

I was shocked to learn that not only was the dead-whale idea accepted, it was received enthusiastically. A good deal of the enthusiasm, I'm afraid, came from my estimated budget. The dead whale was cheap. Cost was so major a consideration that Old Lolly-pop got back in the act with an even cheaper idea. My plan had been to have a rectangular sand-filled base on which the dead blue whale would be lying. Old Lolly-pop took off from there. Instead of sand, the platform would be simulated water — and from one end the whale's head would poke out, and from the other, its flukes. In between there would be nothing but water. It would cost next to nothing — especially if we didn't show too much of either the head or the flukes. Among the other notable flaws in this plan was the fact that whales just don't bend that way, cartoonists notwithstanding. I called it the "gopher plan" because the idea of this whale's head poking out of the floor reminded me of a gopher.

I was upset about the happy reception of the dead whale idea. Stringfellow liked it so well he kept a small model of it in his office, to show to any and all visitors. I found myself having to defend the concept. "Well, how else do you ever see a whole whale?" I kept asking my hecklers, mostly my scientific colleagues.

Plans for its construction were moving along, and at one of our Hall of Ocean Life meetings, Charlie Breder provided the lead that was to be my salvation. We had been talking about lighting the corpse, and he mentioned that in the beached whales that he had seen, phosphorescent bacteria had grown on it so that at night it was outlined in a ghostly glow. We decided that we would have a cycling light over the whale that would change, over a five minute period, from night to day — and in the dark part we would indicate the phosphorescence with ultra-violet light.

Then Gordon Reekie directed my thinking a little more along the road to glory, by mentioning that it would be nice to have a record with the cries of gulls and other sea birds that would naturally hover over such a carcass. That was all I needed. There was one other sense to be catered to, but I saved my idea for a few weeks.

Periodically small groups of Museum fund raisers have lunch at the Museum and receive an inspirational talk from one of the staff so that they can start their letters of solicitation with "I was at the Museum the other day when this wonderful curator told us about the exciting new project that..."

I was picked (for the last time as it now seems) to speak to the Women's Committee luncheon about the dead whale. It was my last chance to head things off, and I tried my best.

I showed them some movies of whales, and then told them about our "wonderful" beached-whale exhibit. I waxed poetic with word pictures of the beast. I told how the cries of the sea birds would slowly die out as sunset approached and then the ghostly glow of the bacteria would take over until at dawn, once more, the crash of the waves, and the rising chorus of hungry gulls would again take the fore. And then, as they sat there enthralled by my description, I dropped my voice to a conspiratorial whisper. "We are even planning something never done before. A gentle breeze will waft the odor of the sea toward the visitors, to complete the attack on all the senses, and we are even going to try to simulate the odor of the decomposing whale, so that all can share in this wonderful experience in totality."

A strong and brave group of women; not one of them lost her chicken-a-la-king. But some came close.

Old Lolly-pop made the first of his several attempts to have me fired, but he had more trouble on his hands. "Why," the women wanted to know, "did we have to have a beached whale — a simulated dead one? Why couldn't we have a whale that looked like a live one (and wouldn't smell...)?"

Stringfellow must have gotten it next, because he called me in and put the record back in that same groove. "Come up with a new idea," he said.

AMNH



The world's first, full-sized blue whale habitat group

And to prove that there are no limits to the capabilities of the human mind, I did. Perhaps it was the freedom from the stultifying influence of the dead whale, but the next plan was tremendous. I still get unhappy when I think about its rejection. It would have been one of the wonders of the modern world.

Gordon and I were trying to come up with another new idea for Stringfellow, but we were getting a little thin. We couldn't hang it from the ceiling and we couldn't lay it on the floor. We had decided that the technique that our colleagues at the Smithsonian had chosen with their new whale — supporting it from the wall — was a disgrace to the profession. We were still talking about the Smithsonian whale when I said something like "Well, we haven't tried to make a habitat group yet. They could have done it at the Smithsonian with their narrow hall — just put artificial water from wall to wall."

Gordon look startled. "Of course! We'll cantilever it from the balcony." And so, skipping the tricky engineering, the alternative plans, the abandoned ideas, our masterpiece was this:

On entering the hall (from the balcony level) the visitor would be gazing out over a vast expanse of Antarctic sea. Pancake ice is gently rocking over the surface. In the middle you see the back of a huge blue whale, but only the scant few feet that one really sees of a whale. Behind it, cutting between the ice floes in deadly pursuit, are the five-foot high dorsal fins of three male killer whales. Through the water surface you can see a few feet of the swimming whales. Then you descend to the floor below, and you are beneath the sea! The flicker of the sunlight off the waves dapples the floor. You are gazing up at the bellies of the whales and the sheen of the drifting ice. Around you, along the walls, are also underwater scenes of other marine creatures. You are a skin-diver without apparatus. You are one with the sea.

Gordon and I were ecstatic over this plan. Not only would we have the world's first full-sized blue whale habitat group, but it would also be a walk-in exhibit. The engineers thought that cantilevering the water and the whales would be tricky, but could be done. The pack ice would be used to hide the supports. We had alternative plans for holding up the whales, if needed. This was it!

I don't even know who turned the idea down. I

think it was Old Lolly-pop. "Too expensive," Stringfellow told me.

"But we didn't even give you an estimate on it, sir," I protested.

"What will it cost?" he asked.

"Sir, I guarantee you, this will be the cheapest hall in the Museum."

"How much?"

"On a cubic foot basis, sir, this will be the cheapest hall we have done in years."

"How much?"

"Sir, the Biology of Man Hall cost us \$3.80 per cubic foot. Ocean Life will cost us only \$1.00 a cubic foot."

He began to look interested. "How many cubic feet in Ocean Life?"

"Only 560,000, sir. Can you imagine that? A big hall like that, and we can do it for only a dollar a cubic foot."

Stringfellow gave me a dirty look. "Too much," he said. "Come up with a new idea."

And they didn't even look at our drawing of how wonderful the hall would be

I had had it. I'd meet Gordon in the halls and all we would do is shake our heads "no" at each other. We were out of ideas. Not only that, but we both knew what might have been done with the habitat concept, and we could never be satisfied with anything else.

Lyle Barton saved us. I don't know where he came from, but about this time he took charge of the Exhibition Department under the direction of Gordon Reekie. Lyle had not lived through the past five or six years of heartbreak. He knew of none of the previous schemes, good or bad. He came to us clean, unfettered, and with an active, open mind.

I briefed him: "We've got to have a big whale in the middle of the hall. Stringfellow won't let us hang it by wires from the ceiling. I won't permit a lollypop or a gopher. The Women's Committee won't allow the corpse, and Old Lolly-pop won't allow the habitat group. All we have to do is think of something else."

Lyle did. Gordon and I were so brainwashed about anything hanging from the ceiling that we could never in a million years have come up with Lyle's idea. It was simple logic to him. If we can't hang it from the ceiling with wires we'll skip the wires and attach it to the ceiling directly.

And that is what we did.

It wasn't all that easy, of course, and the idea really got through Stringfellow, Lolly-pop, and the other Higher Ups on a fluke. The Barton scheme had a red herring in it. Engineering.

Instead of arguing over whether or not this was the best way to display a whale, the arguments centered around whether or not the roof would support the weight, whether or not the City would approve a single-point suspension, whether or not plastic was a suitable medium for making the whale, and how much torque was exerted on an eighteen-inch pipe by sixty feet of the front end of the whale. They for-

got about the whale itself

Once we got the go-ahead on the plan to bolt the whale to the ceiling, I had relatively little to do. I provided Lyle with the dimensions (which I had obtained from F.C. Fraser at the British Museum), checked the angle of dive that we planned (and even sent it back to Dr. Fraser for his approval), and

AMNH



So we decided to attach it to the ceiling directly

periodically went up to the Exhibition Department to look at drawings, sketches, and models, all the time nodding sagely, whether I understood it or not.

There were a few more troublesome interludes, but in comparison with my previous problems with the Higher Ups these were minor. Once, as we were transferring the dimensions of the whale from one set of scale drawings to another, we came out with the head of the whale diving five feet into the floor. I left. Lyle solved it somehow.

Another time I went to Washington to see the Smithsonian's new whale and to try to get some inside information about how it was done and what it had cost. A lot of people there didn't want to talk about it, which I could understand after I learned that one morning the staff had come in to find that overnight the whole head, about a quarter of the whale, had fallen off. I did learn, however, that the way they built their whale was not how we wanted to do ours.

We let the whale plans out for bids. While a lot of the work is still done in our own Department of Exhibition, in recent years we have been contracting more and more work out. I had nothing to do with any of this, and generally wasn't consulted.

I don't really know who the contract was with, but I know that the company subcontracted it, and Tom O'Toole built the whale. Tom was the kind of guy who would have been a sergeant in the Army, or perhaps the head of the Seabees. Not only was the impossible possible, it didn't take any longer. We shipped all the plans, specifications, drawings off to Georgia, and I really had nothing to do after that, until the very end. I made one trip to Georgia to see how it was going. It looked O.K. to me. But how do I know how a half-whale, sliced lengthwise and cut into two-foot sections, is supposed to appear?

I wouldn't see it again until it lay scattered — like the rubble of some futuristic war — on the floor of the Hall of Ocean Life.

(This is the first of a two-part article.)

AMNH

I wouldn't see it again until it lay scattered on the floor of the Hall of Ocean Life



Life on Earth

Last October Members had the special opportunity to pre-view segments of David Attenborough's series *Life on Earth*. The series traces the evolution of life from the first primitive cells to the origins of humankind. As Members who joined us in October discovered, the series contains some of the most incredible natural history footage ever photographed.

The series will be broadcast for thirteen consecutive Tuesdays on PBS beginning January 12 at 8:00 p.m. A complete schedule appears below. (Please check your local listings to confirm times and channel)

Life on Earth was produced by the BBC in association with Warner Brothers. Its presentation on PBS is made possible by a grant from Mobil. In addition to the television series, David Attenborough has written a companion book, *Life on Earth*, which is available in the Museum Shop and at local bookstores.

- Tuesday, January 12 — *The Infinite Variety*
- Tuesday, January 19 — *Building Bodies*
- Tuesday, January 26 — *The First Forests*
- Tuesday, February 2 — *The Swarming Hordes*
- Tuesday, February 9 — *Conquest of the Waters*
- Tuesday, February 16 — *Invasion of the Land*
- Tuesday, February 23 — *Victors of the Dry Land*
- Tuesday, March 2 — *Lords of the Air*
- Tuesday, March 9 — *The Rise of the Mammals*
- Tuesday, March 16 — *Theme and Variations*
- Tuesday, March 23 — *The Hunters and the Hunted*
- Tuesday, March 30 — *Life in the Trees*
- Tuesday, April 1 — *The Compulsive Communicators*

Members' Tour of the Month
Gods of the Americas

The February Tour of the Month will use the Hall of Mexico and Central America to explore the gods and religions of the Olmec, Maya, Aztec and other pre-Columbian civilizations. The tours will include a look at the famous Kunz Axe, a blue-green jade carving of a baby-faced jaguar; a life-sized pottery head of a god from Oaxaca with a head-dress molded from real ears of corn; and a massive figure of a two-headed dragon, representing a god from the classic Maya pantheon.

All tours are led by volunteers of the Museum's Highlights Tour Program. The tours are free and open only to Participating, Donor, and Elected Members of the Museum. To join, please use the adjacent coupon.

This tour is not recommended for young children.

Gods of the Americas
Please indicate a first and second choice

- Saturday, February 6 at 10:30 a.m.
- Wednesday, February 10 at 6:30 p.m.
- Saturday, February 20 at 10:30 a.m.
- Sunday, February 21 at 10:30 a.m.
- Wednesday, February 24 at 6:30 p.m.
- Sunday, February 28 at 10:30 p.m.

Number of people

Name:

Address

City: State Zip

Daytime phone.

Membership category:

Please mail with a self-addressed, stamped envelope to: Gods of the Americas, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After January 15, please call (212) 873-1327 for ticket availability.

Museum
Notes

This page of original manuscript from Charles Darwin's *Origin of the Species* will be part of a small display celebrating the 150th anniversary of his voyage on the Beagle. The display will open December 27 on the second floor of the Roosevelt Rotunda.

Special
Exhibitions

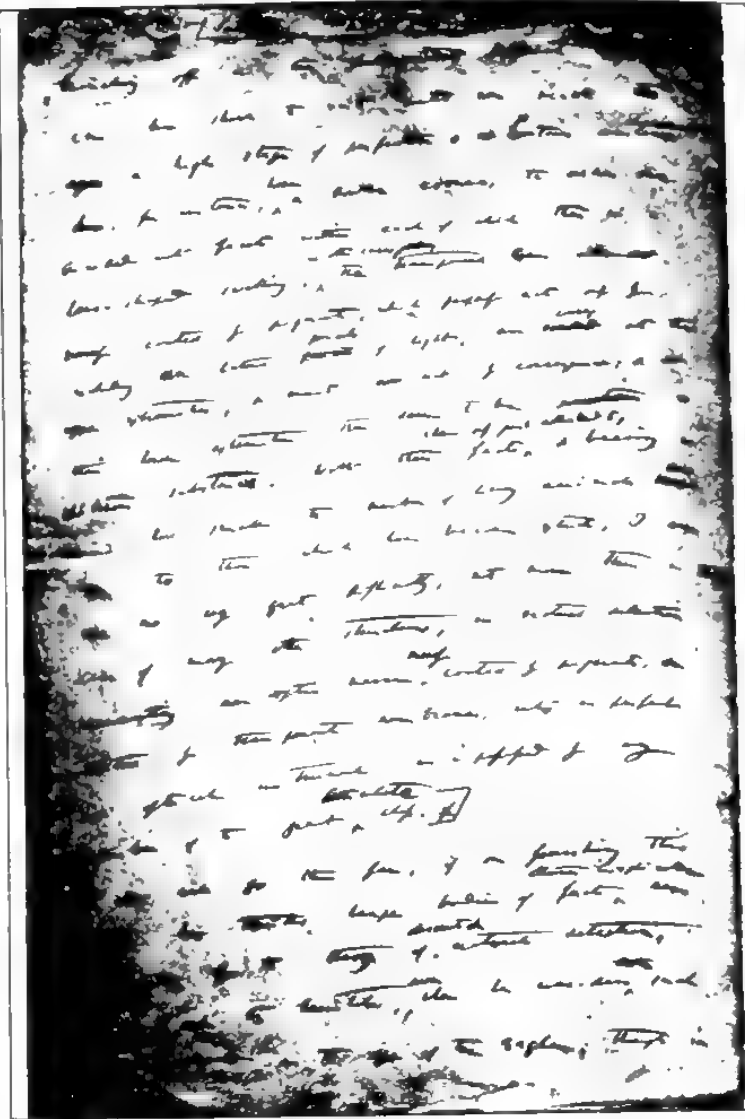
Afro-American Arts of the Suriname Rain Forest. Through January 24 in Gallery 3. Includes elaborate woodcarvings, colorful textiles, and other objects from this South American culture.

Patterns of Paradise. Through February 14, 1982 in Gallery 77. A touring exhibition from the Field Museum of Chicago on tapa, or bark cloth. Includes examples from tropical areas all over the world.

1981 Origami Holiday Tree. Through January 6. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jelly fish and much, much more. A delight for both children and adults.

To the Ends of the Earth. Center Gallery, second floor. An exhibit of archival photographs many from the Museum's collection, taken on four Museum-led expeditions to the far reaches of the world. The exhibit celebrates the publication of the book by the same name.

Carved Birds. Roosevelt Rotunda, second floor. Two striking examples of how realistic carved figures can be



room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran-Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium
Events

Star of Wonder. Through January 5, 1982. What was the "Star of Wonder" that led the wise men on their journey to Bethlehem? Was it a comet? A bright meteor? Some have suggested that it was a nova or even a rare grouping of planets. This show is a celebration of the holiday season for the whole family.

The Night of the Hunter. January 6 through March 1. Orion has been called the Hunter for thousands of years. This show combines astronomy and mythology to explore the fascinating phenomena that make up this constellation.

Sky show times:
Weekdays: 1:30 and 3:30

p.m.
Weekends: hourly, 1:00 through 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

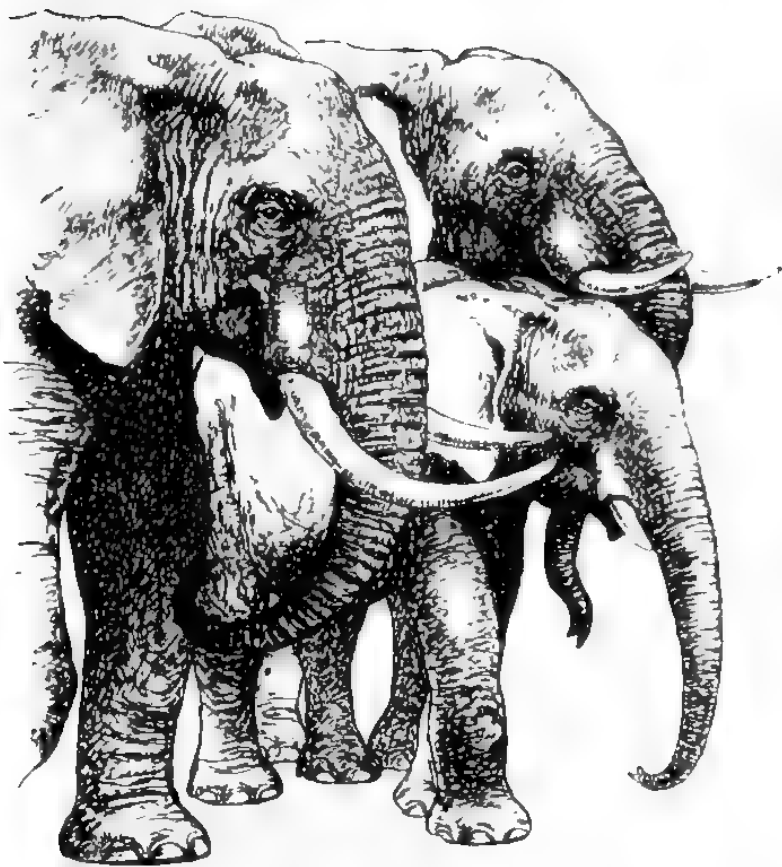
Museum
Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays: 10:00 a.m. to 4:45 p.m. Wednesday: 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$4.85 for cars, \$6.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.



THANK YOU FOR HELPING TO PRESERVE A NATURAL RESOURCE

The American Museum of Natural History warmly thanks those companies that have helped keep a door open to the natural world. Since its founding in 1869, the Museum has educated and entertained millions of visitors (over 2.5 million) per year and supported the scientists and vast collections that place us among the world's most important centers for natural history research. It is in large part through the generous contributions of our friends in the business community that we are able to continue this tradition of excellence. Those of you associated with companies that number among our Corporate Contributors should feel a part of this commitment and take pride in that fact. We gratefully acknowledge the following companies that have contributed \$500 or more:

ACF Foundation, Inc
AIRCO, Inc
ALCOA Foundation
Allied Corporation Foundation
Allied Stores Foundation
AMAX Foundation, Inc
Amcon Group, Inc
Amerace Corp
Amerada Hess Corp
American Bank Note Company
American Broadcasting Company
American Can Company Foundation
American Electric Power Service Corp
American Express Foundation
American Re-Insurance Company
American Standard Foundation, Inc
American Telephone & Telegraph Company
Ametek, Inc
AMF Foundation
Amstar Corp
The Anaconda Company
Arthur Andersen & Company
ARCO Oil & Gas Company
ASARCO, Inc
Ashland Oil, Inc
Associated Dry Goods
Atlantic Bank of New York
Atlantic Richfield Foundation
Avco Corp
AVNET, Inc

Avon Products Foundation, Inc
The Bank of New York
Bankers Trust Company
Barclays Bank International Ltd. Charitable Trust
Becker Warburg Paribas Foundation
Beneficial Foundation, Inc
Bergdorf Goodman Company
Eleanor L. Bissinger
Block Drug Corp
Bloomingdale's
Booz Allen & Hamilton, Inc
The Bowery Savings Bank
Bowne & Company, Inc
Bristol-Myers Company Foundation
Bunge Corp
Burlington Industries, Inc
Capital Cities Foundation, Inc
Guy Carpenter & Company, Inc
Carter-Wallace, Inc
CBS, Inc
Celanese Corp
The Chase Manhattan Bank, N.A.
Chemical Bank
Chesebrough-Pond's, Inc
Chevron U.S.A., Inc
Chicago Pneumatic Tool Company
Chiquita Brands, Inc
Chubb & Son, Inc
CIBA-GEIGY Corp
Citibank, N.A.

Coach Leatherware
The Coca-Cola Bottling Company of New York, Inc
The Coca-Cola Company
Colgate-Palmolive Company
Community Ocean Services, Inc
Consolidated Edison Company of New York, Inc
Constans-Culver Foundation, Inc
Continental Bank International
The Continental Corporation Foundation
The Continental Group Foundation, Inc
Conoco, Inc
Coopers & Lybrand
Corning Glass Works Foundation
The Cowles Charitable Trust
Crum and Forster Insurance Company
Louise B. and Edgar Cullman Foundation
D. Agostino Supermarkets
The Daily News Foundation
Dancer Fitzgerald Sample, Inc
Dean Witter Reynolds, Inc
Deloitte Haskins & Sells
Dextra Baldwin McGonagle Foundation, Inc
Diamond International Corp
The Dime Savings Bank of New York
Discount Corp. of New York
Doyle Dane Bernbach, Inc
Dun & Bradstreet, Inc
Duval Corp
East River Savings Bank
Emigrant Savings Bank
Charles Englehard Foundation
Englehard Minerals and Chemicals Corp
Equitable Life Assurance Society of the United States
Esquire, Inc
Ethan Allen, Inc
Ethyl Corp
The T. M. Evans Foundation, Inc
Exxon Corporation
The First Boston Foundation Trust
Fluor Corp
Flying Tiger Line
Ford Motor Company Fund
Franklin Savings Bank
F. William Free & Company
Freeport Minerals Company
Fribourg Foundation, Inc
GAF Corp
General Foods Corp
General Reinsurance Corp
General Signal Corp
General Telephone & Electronics Corp
Getty Oil Corp
Gilman Foundation
Glamour Magazine
Goldfarb and Fleece
Grace Foundation
Graham & Sons, Inc
The Greater New York Savings Bank
Greenwich Savings Bank
The Guardian Life Insurance Company of America
Gulf + Western Foundation
Frank B. Hall & Company, Inc
Handy & Harman Foundation
Harcourt Brace Jovanovich, Inc
Harlem Savings Bank
The Hearst Foundation
Heeramanek Galleries
H. J. Heinz II Charitable and Family Trust
Home Life Insurance Company
Homestake Mining Company
International Business Machines Corp
The IFF Foundation, Inc
INCO United States, Inc
International Paper Company Foundation
International Telephone and Telegraph Corp
Irving One Wall Street Foundation
Jaros Baum & Bolles
Johnson & Higgins
The Johnson's Wax Fund, Inc
Joyce Beverages, New York
Kennecott Corp
Kidder Peabody & Company
Kimberly-Clark Foundation
F. M. Kirby Foundation
Kliklok Corp
Lebenthal and Company, Inc
Lehman Brothers Kuhn Loeb Foundation
Leonhardt Foundation, Inc
Lever Brothers Company Foundation, Inc
The Lionel Corp
Thomas J. Lipton Foundation, Inc
Lord and Taylor
Leon Lowenstein Foundation, Inc
R. H. Macy and Company, Inc
Main Hurdman Foundation
Manufacturers Hanover Foundation
Marine Midland Bank
Marsh and McLennan Companies, Inc
McCann-Erickson, Inc
McGraw-Hill, Inc
McKinsey & Company, Inc
Melville Corp
Mercedes-Benz of N.A.
Merck & Company, Inc
Merrill Lynch & Company, Inc
Metropolitan Life Foundation
Mies Metal
Mitsubishi International Corp
Mitsui and Company
Mobil Foundation, Inc
MONY Trust
Moore McCormack Resources, Inc
Morgan Guaranty Trust Company of New York
Morgan Stanley and Company, Inc
William T. Morris Foundation
National Bank of North America

National Broadcasting Company, Inc
National Distillers & Chemical Corporation
NCR Corp
New York Life Foundation
New York Telephone Company
The New York Times Company Foundation, Inc
Newmont Mining Corporation
Newsweek, Inc
The NL Industries Foundation, Inc
Noranda Mines Ltd
North American Philips Corp
North American Reinsurance Corp
Occidental Exploration and Production Co.
O.C.F. Foundation
Ogilvy & Mather, Inc
Olin Corporation Charitable Trust
Oppenheimer and Company, Inc
Otis Elevator Company
Owens-Corning Fiberglas Corp
Pacific Transducer Corp
Paine, Webber, Jackson & Curtis, Inc
Peat Marwick Mitchell & Company
Pechiney Ugine Kuhlman Corp
J. C. Penney Company, Inc
The Pfizer Foundation, Inc
Phelps Dodge Foundation
Philip Morris, Inc
The Pren-Hall Foundation, Inc
Price-Waterhouse & Company
The Procter & Gamble Fund
The Prudential Insurance Company of America
Robert K. Raiser Foundation, Inc
RCA Corp
Reading and Bates Offshore Drilling Co.
Reliance Group, Inc
Republic National Bank of New York
Helena Rubinstein Foundation
Russell Reynolds Associates
Richardson-Vicks, Inc
Rockefeller Center, Inc
Rollins Burdick Hunter of New York, Inc
Royal Insurance Company
The Rudin Foundation, Inc
St. Joe Minerals Corp
St. Regis Paper Company
Saulson Brothers Foundation, Inc
Saudi International Bank
Schering-Plough Foundation, Inc
Scherman Foundation, Inc
Schlumberger Horizons, Inc
Scientific American
Scovill Foundation, Inc
Scudder, Stevens & Clark
Sears, Roebuck & Company
Shell Oil Company
Siemens Corp
Simplicity Pattern Company, Inc
The Smith Barney Foundation
Sony Corporation of America Foundation, Inc
Sotheby Parke Bernet, Inc
Speidel Newspapers Charitable Foundation
The Sperry & Hutchinson Company
Sperry Corp
Sprague Electric Company
Squibb Corp
Standard Brands Incorporated
The Starr Foundation
Sterling Drug, Inc
Sugar Foods Corp
Swig Weiler and Arnow Management Co., Inc
Swiss American Securities, Inc
Swiss Bank Corporation
Teachers Insurance & Annuity Association of America
Tenneco Chemicals, Inc
Texaco, Inc
Texasgulf, Inc
Thomas & Betts Charitable Trust
J. Walter Thompson Fund, Inc
The Oakleigh L. Thorne Foundation
Ticor Foundation
Tiffany and Company
Time, Inc
Touche Ross & Company
Transway International Foundation
The Travelers Insurance Company
Tudor Foundation, Inc
Unilever United States, Inc
Union Carbide Corp
Union Pacific Foundation
United Airlines Foundation
United Brands Foundation
United Industrial Corp
U.S. Industries, Inc
United States Life Corp
United States Steel Foundation
United States Trust Company
Universal Leaf Tobacco Company, Inc
Uris Brothers Foundation
Wallace Murray Foundation
Warner Communications, Inc
The Raymond John Wean Foundation
Pierre J. Wertheimer Foundation
Western Electric Fund
Westvaco Foundation
The Wheelabrator Foundation, Inc
The Widder Foundation, Inc
Lawrence A. Wien Foundation
John Wiley and Sons, Inc
The H. W. Wilson Foundation, Inc
Harry Winston, Inc
Wyssmont Company, Inc
Arthur Young & Company
Young and Rubicam, Inc
Carl Zeiss, Inc

Contributors through October 26, 1981

January 1982
Sun

Mon

Tue

Wed

Thu

Fri

Sat



3 Last weekend to see *Through the Looking Glass: The History of Microscopes* in the Akeley Gallery.

Museum open until 6:00 p.m.

Quadrantid Meteor Shower

4 First day of classes for many of the Courses for Stargazers. For more information call (212) 873-1300, ext. 206.

5 Last day to see the sky show *Star of Wonder* at the Hayden Planetarium.

6 *Night of the Hunter*, a sky show about the Orion constellation, opens at the Hayden Planetarium.

Last day to see *Origami Holiday*. Free.

1 New Year's Day Museum open until 6:00 p.m.

2 Last weekend to see *Through the Looking Glass: The History of Microscopes* in the Akeley Gallery.

Museum open until 6:00 p.m.

First Quarter (half moon)

9 **2:00 and 3:00 p.m.** *New Natural History Films*. Auditorium. Free. (See article page 2.)

Full Moon

10 **2:00 and 3:00 p.m.** *New Natural History Films*. Auditorium. Free. (See article page 2.)

1:00 p.m. *American Cetacean Society*. Rm. 319. Free.

2:00 p.m. *New York Shell Club*. Rm. 426. Free.

11

12 **8:00 p.m.** *Linnaean Society*. Education Hall. Free.

13 **7:30 p.m.** *New York Mineralogical Society*. People Center. Free.

14 **7:30 p.m.** *New York Microscopical Society*. Rm. 419. Free.

15

16 Last Quarter (half moon)

17 **12:00 and 3:00 p.m.** *Whales: Their Culture and Behavior*, with Roger Payne.

Family Members' Program. Reservations required. (See article page 4.)

2:00 p.m. *New York Turtle and Tortoise Society*. Rm. 129. Free.

2:00 p.m. *New York Paleontological Society*. Rm. 426. Free.

18

19 **8:00 p.m.** *New York Entomological Society*. Rm. 129. Free.

20 **7:30 p.m.** *The Voyagers' Saturn*, with Dr. Tobias Owen. Wednesday Evening Members' Program. Reservations required. (See article page 4.)

21



24 Last day to see *Afro-American Arts of the Suriname Rain Forest*.

New Moon

26 **8:00 p.m.** *Linnaean Society*. Education Hall. Free.

27 **7:30 p.m.** *Ritual Running in the Americas*, with Peter Nabokov. Auditorium. Free. (See article page 3.)

7:30 p.m. *Lapidary and Gem Society*. People Center. Free.

28 **7:30 p.m.** *New York Microscopical Society*. Rm. Free.

29

30

31 **2:00 p.m.** *Dinzulu and His African Drummers, Dancers and Singers*. Auditorium. Free. (See article page 3.)

American Museum of Natural History

ROOTS & FUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 6, No 2 February 1982

NATUREMAX
(See details page 7)



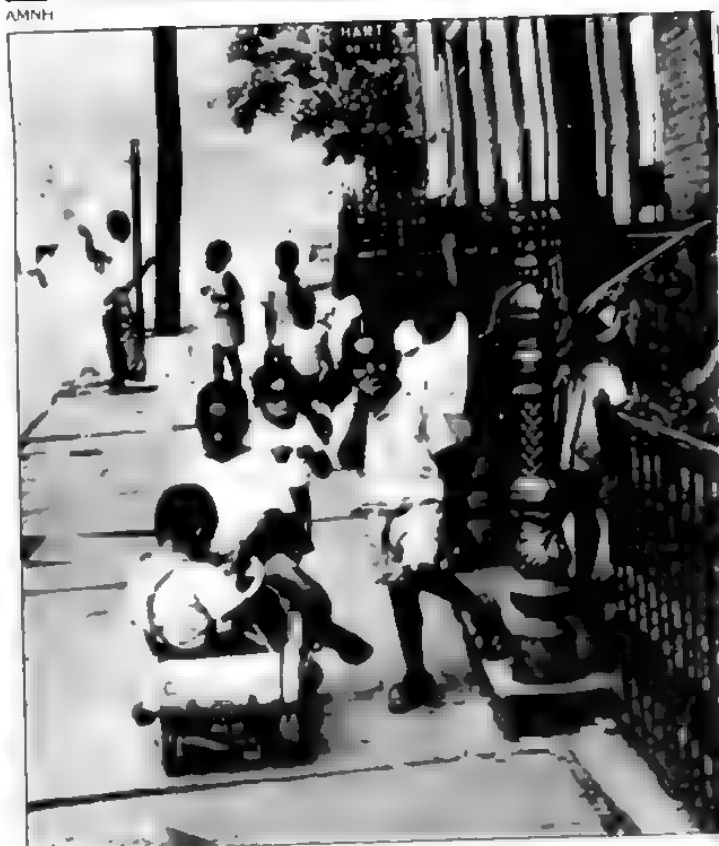
Courtesy of Ernest Smith



AMNH



AMNH



Explorations of Culture

During the month of February, programming in the People Center will be focused on celebrating Black History Month. There will be presentations ranging from the arts and crafts of African and black American societies (*Masks as Art, Masks and Their Meanings in the African World, Quilts of the Black World, Calabash Arts*) to demonstrations of cultural history (*Black American Folk Tales, Songs, Poetry and Tales from Africa and Black America, African and Caribbean Music, A People's Art*).

Two featured programs in Education Hall will be *Featherstone - Poetry and Song*, and a *Jazz Tribute to Billie Holiday*.

Joanna Featherstone will present a children's program of Black American

poetry and music on Sunday, February 14. She brings the poetry to life using music, rhythm, movement and drama, and involves the children directly. On Sunday, February 21, Education Hall will resonate with the sounds of the Inner Circle Productions' *Jazz Tribute to Billie Holiday*. The program features Stella Marrs on vocals, Art Blakey Jr. on drums, Bross Townsend on piano, Bob Cunningham on bass, Charles McGhee on trumpet, Don Hanson on saxophone.

Many other programs are included each weekend. For a complete listing see the calendar on the back page.

These programs, presented by the African-American program of the Department of Education, are made possible in part by grants from the Henry

In celebration of Black History Month, several programs will be offered by the Museum in February, including a special tribute to Billie Holiday (upper left), several explorations of masks and their meanings, a lecture on the Zulu (lower left), and numerous other studies of black culture and history.

Nias Foundation, the Evelyn Sharp Foundation, and a grant to Young Audiences from the American Express Foundation. They will be free to all Museum visitors.

Naturemax!

The Museum proudly announces the opening of its new Naturemax Theater. This unique IMAX large format film system offers a totally engulfing experience for the viewer. Special Members' benefits — including previews on Saturday and Sunday, February 6 and 7 — are described inside.

Page 7

Behind the Scenes

Members are invited to join the scientific staff of the Departments of Mammalogy and Ornithology for a unique look at their research and collections.

Page 5

Children's Choices

Two upcoming programs, a puppet show called *Indian Girl and the Cactus* and a look with Bill Robinson at *The World of Animals*, will be specially geared for family audiences.

Page 3

Special Courses

Whales, Dolphins and People, Lost Cities, The World of Islam, and Anthropology Through Films are just four of the many courses offered by the Department of Education in their *Spring Afternoon and Evening Lecture Series*. There are still openings in many.

Page 2

Four *Workshops for Young People* with studies ranging from animal behavior to microscopes, will be held on weekends in April.

Page 6

Curatorial Explorations

Three scientists at the Museum will discuss their current research and share some of their experiences in the field.

Page 3

Sexual Encounters of the Floral Kind

Wednesday, March 3, 7:30 p.m.
Free and open only to Members



Darwinia californica

What life form reproduces sexually, yet never meets its mate? Can couples hold no attraction for each other and still maintain their relationship through a third party? What is at the root of this life form's problem?

While they approach it differently than their neighbors in the animal kingdom, plants do reproduce sexually. At the root of their problem is their lack of mobility. Nature, how-



Wall Flower

ever, has provided them with a unique means of exchanging chromosomes: insects and other visitors travel unwittingly from one to the other, carrying pollen on their feet and wings. The difficulty is then not one of holding an attraction to your mate, but rather one of attracting the visitors.

In the hour-long film, *Sexual Encounters of the Floral Kind*, John Cook and the Oxford Scientific Films Company explore this fascinating area of nature. Using spectacular photography, some of it time-lapse, they have compiled a wealth of knowledge that is both accurate and entertaining.

"We travelled the world," Cook says, "to get the most



Eranthis (Winter Aconite)

remarkable, most improbable stories of pollination. Some of the things that plants do to lure insects are absolutely unbelievable."

One segment shows how certain lilies, so peaceful in appearance, lure insects into them, then close up, trapping them within. Another shows a lily in Sardinia that emits the odor of rotting flesh to attract blow flies.

John Cook was an Associate Curator in the Museum's

Department of Entomology from 1969 to 1973. Well known for his film on spiders, *Come into My Parlor*, he spent seven years with his colleagues making this latest film. The screening at the Museum will be the first in the United States, and John Cook will be on hand to answer questions.

This program is free and open only to Members and their guests. **Your Membership card is your ticket of admission.**

Satisfy Your Natural Curiosity

A number of fascinating courses are being offered this spring by the Department of Education. Four examples are illustrated here: (top) Whales, Dolphins and People with Richard Ellis, who worked on the blue whale exhibit in the Hall of Ocean Life; (second) Anthropology Through Film with Malcolm Arth, Curator of



Beluga Whales — Richard Ellis



From the film *In Spring One Plants Alone* — Vincent Ward

Education at the Museum, (third) *Lost Cities* with Claireve Grandjovan, professor of Classics at Hunter College; and *The World of Islam* with Paul Sanjacon, Lecturer in Anthropology at the Museum. For complete course listings and registration information, please call (212) 873-7507.



Persepolis — Roger Stone



Courtyard of Qasr al-Muski Mosque in Fez — Paul Sanjacon

Round Trip to Beijing

Wednesday, February 17, 7:30 p.m.
Free and open only to Members

Round Trip to Beijing, one film in the series *Gui Dao — On the Way*, had its premiere in the Margaret Mead Film Festival in October. The enormous differences between Chinese and Western people are visible throughout the film. It brings out some fascinating details of Chinese life in the confinement of a passenger train travelling from Wuchang to Beijing (Peking), a journey of 1,200 kilometers. Particularly striking is the serenity of the people, as well as the film's implicit suggestion that much of what we take for granted is simply non-existent in China.

Twenty hours of travel are compressed into a series of striking images. Prior to departure, railway workers can be seen preparing the train for the overnight trip, seemingly oblivious to the monotony of their tasks. The film focuses

on team No. 6, made up of women who act as stewardesses, catering to the passengers' needs. Their leader, Wang Shaoying, urges her teammates to give the best possible service. She is proud to report, at the end of the voyage, that they have earned twenty-eight compliments.

Members are invited to a special screening of the film for the February Members' program. At the conclusion of the film Dr. Yin Hongfu, of the People's Republic of China and a visiting scientist in the Museum's Department of Invertebrates, will answer questions about life in China.

This program was originally advertised in the January issue of *Rotunda*. As of press time a few tickets were still available. Please call (212) 873-1327 for ticket availability.

ROTUNDA

ISSN 0194-6110

Vol. 6, No. 2
February 1982

Kate Bennett-Mendez — Manager of Membership Services
Stanton G. Orser — Editor
Henry H. Schulson — Associate Editor
Angela Soccodato — Designer
James Budenholzer — Copy Editor
Alan P. Temes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Scientists Afield

Wednesday, March 24, 7:30 p.m.
Free and open only to Members



Southwest Research Station — Jay Cole

The American Museum of Natural History is one of the world's leading institutions for scientific research. Last year alone 150 Museum scientists and their assistants worked on more than 300 research projects. Using films and slides, three of these scientists will discuss their recent field work at our March Members' program.

Malcolm McKenna of the Department of Vertebrate

Paleontology will describe his recent trip to China, during which he visited the scientific sites first explored during the Museum's Central Asiatic Expeditions of the 1920s. These expeditions, led by Roy Chapman Andrews, brought back some of the most spectacular dinosaur and mammal fossils ever found. Yet until Dr. McKenna's trip in 1981 political circumstances had prevented Museum scientists

from visiting the sites since Andrews left more than fifty years ago. Dr. McKenna will discuss how his visit has shed new light on the Andrews' fossils and helped clarify the evolutionary record. He will reveal some significant finds from his own trip.

Judith Winston, of the Department of Invertebrates, will explain her current work with the life histories of bryozoans, a colonial animal found on coral reefs. Because their life spans are shorter than most colonial animals, these animals are excellent as models for observation and experimentation. Dr. Winston says, "you can't understand the animals unless you get down to see them," so she is, among other things, a skin diver.

Jay Cole, of the Department of Herpetology, will focus on his research with unisexual lizards. Incredible as it may seem, these lizards reproduce without mating. In these all-female species, each normal adult produces offspring independently. Dr. Cole

will describe both his field work at the Museum's research station in the Chiricahua Mountains of Arizona and his work in the Museum laboratories where, in a major breakthrough, he

has developed techniques for raising these lizards in captivity.

This program is free and open only to Members. To order tickets, please use the adjacent coupon.

Scientists Afield March 24

This program is open only to Members of the Museum and their guests. Participating, Donor and Elected Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased for \$3.50 each.

Please send me _____ tickets.
Additional tickets at \$3.50 each:

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Scientists Afield, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After February 24 call (212) 873-1327 for ticket availability.

The World of Animals

Sunday, March 28, 11:00 a.m.,
1:30 and 3:30 p.m.

Free for Members, \$2.00 for non-members

A ten-foot Burmese python, a two-toed sloth, a skunk, a falcon and an armadillo will be among the live animals used to illustrate the unique adaptations animals have developed for survival. Wildlife lecturer Bill Robinson will bring together these unusual members of the animal kingdom for our March Family Members' program.

His discussion of them will include why algae grows on the hair of a sloth, how a python captures and eats its prey, and what special biological features allow a falcon to fly at speeds of up to 175 miles per hour. He will also

discuss the importance of species in the balance of nature and the human threat to different species today.

Bill Robinson has been presenting wildlife programs throughout the northeast for many years. *Birds of Prey*, which he presented at the Museum last year, was one of our most popular programs and featured a Harris hawk swooping around the Auditorium.

The World of Animals is free to Members and \$2.00 for non-members. The program is geared for children four years and up. To register, use the adjacent coupon.

Indian Girl and the Cactus

Saturday, February 27, 11:00 a.m., 1:30 and 3:30 p.m.
Free for Members, \$2.00 for non-members



Members, ages four through eight, and their parents are invited to join the Wunderlee and Wilson's Puppets as they present a musical puppet show about the plant and animal life of the southwestern United States. The play delightfully details the trials and tribulations of a talking Saguaro cactus named "Saggy" as it reaches maturity in the Sonoran Desert. On the way the audience meets a Papago Indian girl, a kit fox, and a Gila woodpecker, and finds out how these characters and the lore of the Papago Indians help Saggy become a full flowering cactus. Throughout the play the characters provide insights about how they and their friends survive in the harsh desert environment.

At the end of the play, Juanita Munoz and Sydney Buffum of the Museum's Department of Education will provide special activities relating to desert ecology. Children can draw their favorite desert animals, inspect desert insects

and cacti, and follow a treasure hunt at the Saguaro Cactus exhibit in the Hall of North American Forests.

The program is free to Members, \$2.00 for non-members. To register, please use the adjacent coupon.

Indian Girl and the Cactus, February 27

Participating, Donor and Elected Members are entitled to four free tickets. Associate Members are entitled to one. All other tickets are \$2.00. Please indicate a first and second choice of times (if possible). This program is geared for children 4-8 yrs.

11:00 a.m.

1:30 p.m.

3:30 p.m.

Number of Children's tickets
(children must be accompanied by an adult)
Number of adult tickets

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Indian Girl, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After February 17 call (212) 873-1327 for ticket availability.

The World of Animals, March 28

Participating, Donor and Elected Members are entitled to four free tickets. Associate Members are entitled to one. All other tickets are \$2.00. Please indicate a first and second choice of times (if possible).

11:00 a.m.

1:30 p.m.

3:30 p.m.

Please send me _____ tickets.
Additional tickets at \$2.00:

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: The World of Animals, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After February 28 call (212) 873-1327 for ticket availability.

Letter from the Field

Whale on My Back

Richard G. Van Gelder
Department of Mammalogy

Reprinted with permission from CURATOR XIII/2 © AMNH 1970

Last month, in a Letter from the Field, Richard Van Gelder of the Department of Mammalogy detailed the planning that ultimately created The Whale in the Hall of Ocean Life. From a life-sized blue whale habitat group to a beached whale exhibit — complete with the smell of the rotting carcass — the ideas that reached the planning stages ranged from spectacular to ludicrous. The final choice was to bolt the whale directly to the ceiling, despite the engineering problems involved. The completed design was sent to Georgia where the construction would take place. Months later, this enormous thorn was back in everyone's side and strewn about the floor of the hall, waiting for its final assembly.

Late in 1967 the whale was shipped from Georgia, in pieces and unwrapped. Great chunks of polyurethane, ochre and pink, littered the floor of the Hall of Ocean Life like the rubble of some futuristic war. Ugly steel-work like a shattered microwave tower added to the impression of a holocaust. But Tom O'Toole, who had built it, was there to produce order out of chaos, and week by week, the whale grew. Tom was a marvel, at both ends of the whale and on the top and bottom at once, as he drove his small crew of workers and generally ended up taking tools in hand and doing it himself faster and more efficiently. I would drop down to see how things were going every few days, and it was always under control.

If Tom was confident of his own competence, I was not of my own. My moment of truth was coming. The secret I had carefully guarded for the past nine years was in danger of being revealed. I was able to handle things pretty well up to this point because we were just roughing out the whale, and I was able to exude an aura of confidence. But now we were getting down to the finishing touches — the angle of the flippers, the width and depth of the grooves on the belly, the color of the eye, and the color of the body. My problem: I had never seen a real blue whale.

Up to this point I had been fortunate in the building of the whale, as I had had the guidance of one of the world's experts, F.C. Fraser of the British Museum. He had been able to send me a one-inch to one-foot accurate scale model of a blue whale as well as paper templates for a full-sized one, and it was from these that we had constructed the whale thus far. He had also tried to help me out on the color. I had sent him a pleading letter, and back came some big sheets of paper blotched with black and white. This was the way a blue whale looked, he told me, but it wasn't enough.

I began telephoning some of my mammalogist colleagues who are specialists on whales, and I got some more surprises. Most of them had never seen a blue whale either, or if they had, they

hadn't seen enough of one to be helpful in the painting. We were reaching a point where something had to be done with the whale, and, without revealing my ignorance, I told Tom something about a prime coat of paint, discussed the absorptive qualities of polyurethane and fibreglas, mentioned the lighting problems in the hall, and guided him in mixing up something to put on the whale.

It came out battleship gray. Even with my lack of knowledge of blue whales, I knew that this was wrong. I continued my search for a whale-painter, and finally contacted Ed Mitchell. Ed is the whaleman of the Canadian Bureau of Fisheries (even though whales are not fishes) and is both enthusiastic and highly competent not only with whales, dolphins, and porpoises, but also with seals and sea lions, living and fossil. He is also a pretty good artist, and before he finished his week with us, we knew not only how and what to paint the whale, but exactly what color the eye should be, at what angle the flippers should be — and on the side he re-colored our school of dolphins.

In our original planning, the whale was supposed to weigh about four tons. The steelwork in the ceiling was built accordingly, with a more than considerable margin for safety. But by the time the whale was built, it weighed ten tons. It seems that a heavier weight of polyurethane plastic had been used. The fibreglas coating was heavy, and these and a few other things had added weight considerably. When we calculated that it had taken six hundred pounds of paint to cover the whale, we decided that it would be better to sand off the battleship-gray coat, rather than paint over it. For a couple of weeks the hall was coated with gray dust from the sanding operation. But nothing we could do would reduce the weight to less than ten tons. We hired some engineering consultants to tell us whether the ceiling supports could hold the whale, with a legal safety factor. They had their doubts. We hired another group of engineers and they said that it would hold, but only after we had x-rayed

all of the welded joints to assure that they were strong. There were a lot of nervous engineers the day we raised the whale.

There was a nervous curator, too. I had passed another crisis with Old Lolly-pop. This time it was about the length of the whale. I had been going around saying it was ninety-two feet long. I had said this because the Smithsonian's whale was ninety-two feet long and it had been built from the same scale model that ours had. The real whale, from which the measurements had been taken in 1926 in South Georgia in the South Atlantic, had measured eighty-nine feet, four inches. But this was a standard scientific measurement from the tip of the upper jaw to the notch between the flukes. The lower jaw actually juts out six or so inches farther than the upper, and the sweep of the flukes extends back more than a foot or two beyond the notch. If the Smithsonian's whale was ninety-two feet, ours must be ninety-two feet. That wasn't good enough for Old Lolly-pop. "Why isn't our whale the biggest in the world?" he asked, when he heard that we were tied with the Smithsonian. Word was passed back to me, and I arbitrarily added on two feet: "Tell him that our whale is ninety-four feet long." I figured he would never try to measure it himself. Then I began to wonder.

Early one morning before anyone else was in the Museum, Tom and I measured the whale. I held the tape at the front end and he started dragging it over the back. "Ninety-one, ninety-two, ninety-three, ninety-four," he called, and I shouted "stop!" The whale was at least ninety-four feet long. I hadn't lied to Old Lolly-pop. There was still some more whale to go, but how much I don't know. We have the biggest whale in the world. Lolly-pop was happy, and if someone tried to outdo us in the future, we can always remeasure it. Do I ever wonder how long it really is? I don't. So far as I am concerned, it's eighty-nine feet four inches long, as we measure these things scientifically. And so is the one in Washington, and so is the one in the British Museum.

The raising of the whale went like clockwork. It was slow, it took all day, but nothing went wrong. The engineers were all smiles. Tom O'Toole was in a relaxed glow, and I had just passed another crisis, this time with the new President of the Museum, Gardner Stout.

Early on the day of the raising of the whale I had been interviewed by Murray Schumach of the New York

The raising of the whale went like clockwork. It was slow — it took all day — but nothing went wrong. The engineers were all smiles.



AMNH

Times. Murray is a kindly, gentle, superb reporter with whom I had worked before. One of his questions was about what the whale would be called. I told him that I didn't think that it would get a nickname and that, like the old one, it would be known as THE WHALE. But later that morning, when President Stout and I were talking, he came up with a great idea. "We'll get school kids from all over the world to send in names for the whale, and then we'll pick the best one."

"Who's going to pick the name?" I asked, knowing what the answer was going to be, but still hoping that he would say that the Public Relations Department would. "Why, you will, of course. It's your whale."

I shuddered. The thought of judging a couple of hundred thousand name applications didn't appeal to me.

"Why don't we also make each applicant send in an essay on whale conservation?" I suggested, hoping to cut down on the volume.

"We've already got an essay contest," he reminded me.

It sort of ruined my day, but Murray had saved me. His story about the raising of the whale made the front page of the New York Times the next morning. In it he quoted me as saying that the new whale would be called THE WHALE. "When you have a superlative, you don't need a nickname," President Stout agreed and dropped the contest idea.

Lyle Barton, whose idea it had been to bolt the whale to the ceiling, was much involved with the completion of the other groups in the hall, but he had a major worry about the whale. He was afraid that the nose, some sixty or seventy feet from the point of attachment to the ceiling, was going to sag. After the whale was up, he carefully measured the distance from the floor to the tip of the nose. Then he got himself a stick and put a nail through it at the exact height of the nose-tip, and

every day he would take his stick and stand it up against the whale to see if the nose was drooping.

Some of the carpenters working on the hall noticed this ritual and decided to help out. When Barton had finished each day, the carpenters would take his stick, smear a little glue on the bottom, and dip it in sawdust. Steadily, infinitesimally, but surely, each day, the nail point crept higher and higher over the whale's nose. Lyle was sure that the nose was sagging. Then one day he noticed the growing clump of sawdust on the bottom of his pole and realized what was happening. He got himself another pole, which he kept locked up, but for a while went through the daily ritual in front of the carpenters, just to keep them happy.

The last two months before the opening of the hall were hectic. There was another crisis or two, but to the hundreds gathered for the occasion, all was in order. No one noticed that those of us who were intimately associated with the construction of the whale never walked directly under it.

The whale was a huge success. On the first Sunday it was open more than 35,000 people came to see it, a new record for the Museum. I used to go down to the hall and wander around, listening to the comments about the whale. And I would think about the years of good plans, bad plans and "the other ideas."

In retrospect, everything came out well. Maybe they were right in sending us back to the drawing board again and again. Maybe their motives were not the best, but perhaps our early ideas weren't either. Thanks to all the ideas — good and bad — and thanks to the imagination of Lyle Barton and Gordon Reekie, our final product is a superb model, imaginatively and dramatically displayed.

(This is the second of a two-part article.)

Behind-the-Scenes Tours

Wednesday evening, March 10,
and Sunday, March 14

Members, you are invited to step behind the scenes of the Museum into areas that are never open to the general public. These unique Behind-the-Scenes Tours introduce you to the areas of research and exhibition that are supported by your Membership dues

- Meet Museum scientists and staff members in the laboratories in which they work
- Learn about the processes used in the preparation of specimens.
- See the storerooms that house these extraordinary collections.

In the *Department of Mammalogy* you will see how materials are prepared for and used by scientists and researchers from around the world. Members of the staff will discuss their roles in the department and share anecdotes about their experiences

The next stop will be the *Department of Ornithology*. Scientists will take you to the sound and biochemical laboratories where they study bird behavior and biology. You will also visit the storage areas to see a selection of rare and beautiful specimens of exotic birds from the Museum's unparalleled collection

The tour will conclude with light refreshments in the Audubon Gallery, which houses the Museum's collection of beautiful Audubon prints

This was one of our most popular Behind-the-Scenes Tours ever, so we are including it again this year

Tours last approximately an hour-and-a-half. Reservations at \$5.50 per person can be made by completing the adjacent coupon. Early reservations for the limited places are advised



Behind-the-Scenes Tours

Tours will leave at fifteen minute intervals beginning at 5:15 p.m. on Wednesday, March 10, and at 10:30 a.m. on Sunday, March 14. We will send you a confirmation card by mail. Your card will indicate the exact time your tour will start

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please indicate a first, second, and third choice (if possible)

☐ Wed., Mar. 10, between 5:15 and 6:00 p.m.

☐ Wed., Mar. 10, between 6:00 and 7:30 p.m.

☐ Sun., Mar. 14, between 10:30 a.m. and 12:00 noon

☐ Sun., Mar. 14, between 1:00 and 3:30 p.m.

Enclosed is my check for \$ _____ to reserve _____ places at \$5.50 each for the Behind-the-Scenes Tour

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Behind-the-Scenes Tours*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. After February 22, please call (212) 873-1327 for reservation information

The Last and First Eskimos: A Native American Culture in Transition

Saturday, March 27, 10:30 a.m. to 4:30 p.m. Education Hall
\$6.00 for Members, \$7.50 for non-members



The influence of the white man in Alaska has created drastic changes in the customs of the Alaskan Eskimos. Young people today face a bewildering array of options as they attempt to integrate their traditional customs and values with new economic and social influences

This symposium brings together a diverse panel that includes anthropologists, filmmakers, a psychiatrist, an artist and a photographer to discuss the issues that face the Alaskan Eskimo today. Using films and slides, they compare the approaches and techniques used by different disciplines to document this culture in transition

Dr. Robert Coles, a psychiatrist, is the author of the Pulitzer Prize-winning series, *Children of Crisis*. He collaborated with photographer Alex Harris on the book, *The Last and First Eskimos*, which will be the subject of an exhibition at the International Center of Photography (Fifth Avenue and 94th Street, March 27-May 9). Joining them will be Joseph Senungetuk, an Eskimo artist, teacher and author of the book, *Give or Take a Century - An Eskimo Chronicle*

Sarah Elder and Leonard Kamerling have made five outstanding films about Alaskan Eskimos. They will show one of their films and discuss their approach to filmmaking. Dr. James Van Stone, Curator of North American

Archeology and Ethnology at the Field Museum in Chicago, and Dr. Wendell Oswalt, Professor of Anthropology at UCLA, are two respected anthropologists specializing in Alaskan Eskimo culture and have written numerous books and articles. They will present a historical and contemporary overview

Moderating the Symposium will be Dr. Jay Ruby, Associate Professor of Anthropology at Temple University, and Dr. Malcolm Arth, anthropologist and Curator of Education, at the Museum

This Symposium, presented in cooperation with the International Center of Photography, is made possible, in

First Communion Day in Tununak. The Last and First Eskimos: A Native American Culture in Transition will be the subject of both a photographic exhibition at the International Center of Photography and a symposium at the American Museum of Natural History. Tickets to the symposium are limited and early reservations are strongly advised

part, by a grant to the Center from the National Endowment for the Humanities. To order tickets use the adjacent coupon. Early reservations are strongly advised

The Last and First Eskimos, March 27

Members of the American Museum of Natural History or the International Center of Photography may order tickets at the Members' price of \$6.00. All other tickets are \$7.50

Number of Members' tickets	X \$6.00	\$
Number of non-members' tickets	X \$7.50	\$
Total payment enclosed		\$

Name _____

Address _____

City _____ State _____ Zip _____

Daytime phone _____

Please make check payable to the International Center of Photography and mail with a self-addressed, stamped envelope to: *Eskimos*, International Center of Photography, Education Department, 1130 Fifth Avenue, New York, NY, 10028. After February 28 call (212) 860-1776 for ticket availability

Workshops for Young People

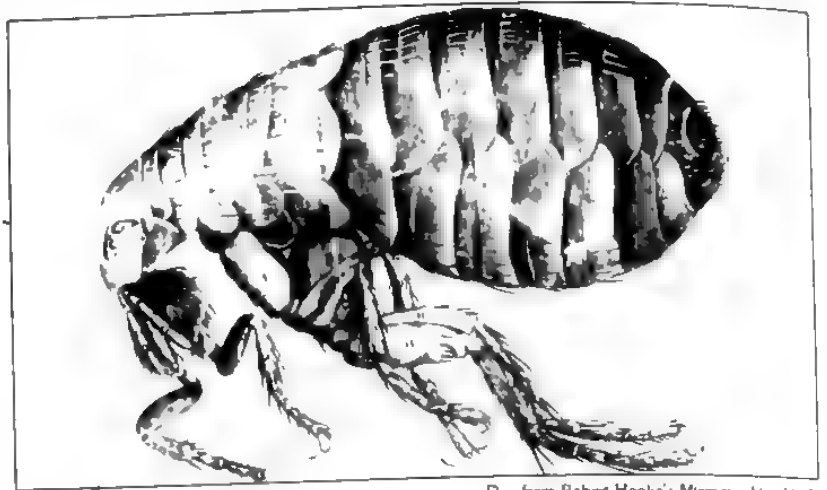
This spring, the Museum's Department of Education will once again offer *Workshops for Young People* on weekends beginning April 17. All courses are taught by experienced Museum staff members, and serve either as exciting introductions for youngsters beginning to know the Museum, or as excellent supplements for experienced young Museum-goers. Early registration is strongly advised.

To register please use the adjacent coupon.
Exploring with the Microscope. Six Saturdays: April 17, 24, May 1, 8, 15 and 22. (A) 10:15 to 11:45, or (B) 12:15 to 1:45 (Indicate session A or B when registering), grades 4 through 7. Fee: \$20.00 (\$18.00 for Participating, Donor and Elected Members).
 Open your eyes to a hidden world through one of the scientist's most practical tools,

the compound microscope. Work consists of independent investigation for all levels of experience. A variety of cells and their structures are explored, from blood cells to plant cells to single-celled organisms. Taught by Ismael Calderon, Coordinator of the Junior High School Natural Science Project in the Department of Education.

Nature Crafts. Four Saturdays: April 17, 24, May 1 and 8. 2:15 to 3:45 p.m., grades 3 and 4. Fee: \$14.00 (\$12.50 for Participating, Donor and Elected Members).

Craft activities, with suggestions for projects to be continued at home, stimulate and enhance a child's learning about the natural world. In this workshop course, leaf printing, sprouting seeds, making casts of fossil specimens and starting one's own natural history collection are among the activities included. Materials are collected on short field walks in the Museum vicinity. Taught by Sydney Bufum, Instructor, and Phyllis Mandel, Senior Instructor, in the Department of Education.



Flea from Robert Hooke's *Micrographia*, 1664

Birding for Beginners. Three Sundays: April 18, 25, and May 2. 10:15 to 11:45, grades 4 through 7, plus parents. Fee: \$12.00 (\$10.00 for Participating, Donor and Elected Members).

For centuries, people have envied the ability of birds to fly. In this exciting new course parents are invited to enroll along with their children to take a closer look at the grace and beauty of these fascinating creatures. An introductory slide lecture supplements the use of study specimens, the Museum exhibition halls, and short field walks into nearby Central Park. A limited number of field glasses are provided, so students who own a pair are encouraged to bring them. Taught by Brian Moss, Instructor in the Department of Education.

Understanding Animal Behavior. Five Sundays: April 18, 25, May 2, 9 and 16. 12:30 to 2:00 p.m., grades 5 through 7. Fee: \$17.00 (\$15.00 for Participating, Donor and Elected Members).

Explore the exciting field of animal behavior. Ideas basic to this discipline are discussed as students observe the behavior of a variety of animals, from the exotic to the familiar. Learn how such studies contribute to our understanding of the world around us. Taught by Betty Faber, Research Associate in the Department of Entomology.

These Workshops are made possible in part by a generous gift from the Louis Calder Foundation.

I would like to register for the following Workshop(s):

Workshop(s)

Student's last name: _____ First: _____

Age: _____ Grade: _____ Daytime phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category:

I enclose a stamped, self-addressed envelope and a check for \$ _____ payable to the American Museum of Natural History. Mail to: *Workshops for Young People*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Museum Notes

The numerous ways that artists use the Museum's resources will be the subject of the exhibit *The Museum and the Creative Artist*.



Ron Carvina making rubbings of the Museum facade

Special Exhibitions

Patterns of Paradise. Through early February in Gallery 77. A touring exhibition from the Field Museum of Chicago on tapa, or bark cloth. Includes examples from tropical areas all over the world.

The Museum and the Creative Artist. Opens February 3 through the middle of May in the Akeley Gallery. A collection of works by artists who have drawn on the Museum as a resource.

Evolution, Darwin and the Beagle. Through February in the Roosevelt Rotunda, second floor. A small exhibit celebrating the 150th anniversary of the sailing of the Beagle.

Programs and Tours

People Center. A series of lectures, programs, films and performances will be held on weekends from 1:00 to 4:30 p.m. to celebrate Black History Month. For complete list-

ings of programs see the calendar page.
Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first

floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

The Night of the Hunter. January 6 through March 1. Orion has been called the Hunter for thousands of years. This show combines astronomy and mythology to explore the fascinating phenomena that make up this constellation.

Sky show times
 Weekdays: 1:30 and 3:30 p.m.

Weekends: hourly, 1:00 through 5:00 p.m.
 Admission for Participating, Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25 percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Friday, Saturday, Sunday and holidays. 10:00 a.m. to 4:45 p.m. Wednesday 10:00 a.m. to 8:00 p.m.

Cafeteria Hours. Monday through Sunday: 11:00 a.m. to 4:15 p.m. Wednesday evenings: 5:30 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$4.85 for cars, \$6.25 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.

Southwestern Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit write ahead for details. Southwestern Research Station, Portal, Arizona, 85632.

NATUREMAX

AMERICAN MUSEUM OF NATURAL HISTORY

The NATUREMAX THEATER houses the Museum's extraordinary new IMAX film system. The theater (in the Museum's Auditorium) contains a screen four stories tall and more than sixty feet wide, as well as a brand-new six-channel sound system. The combination of screen and high quality sound engulfs the audience in an overwhelming film experience.

Members' Previews: Participating, Donor and Elected Members are invited to preview the NATUREMAX THEATER and the film **TO FLY** on the weekend of February 6 and 7. Please call (212) 873-1327 for reservation information.

A New Benefit for Members: Each year, Participating, Donor and Elected Members will receive free tickets to films in the NATUREMAX THEATER. Tickets for 1982 are being mailed to you this month. If you do not receive them by the middle of March, please call us at (212) 873-1327.

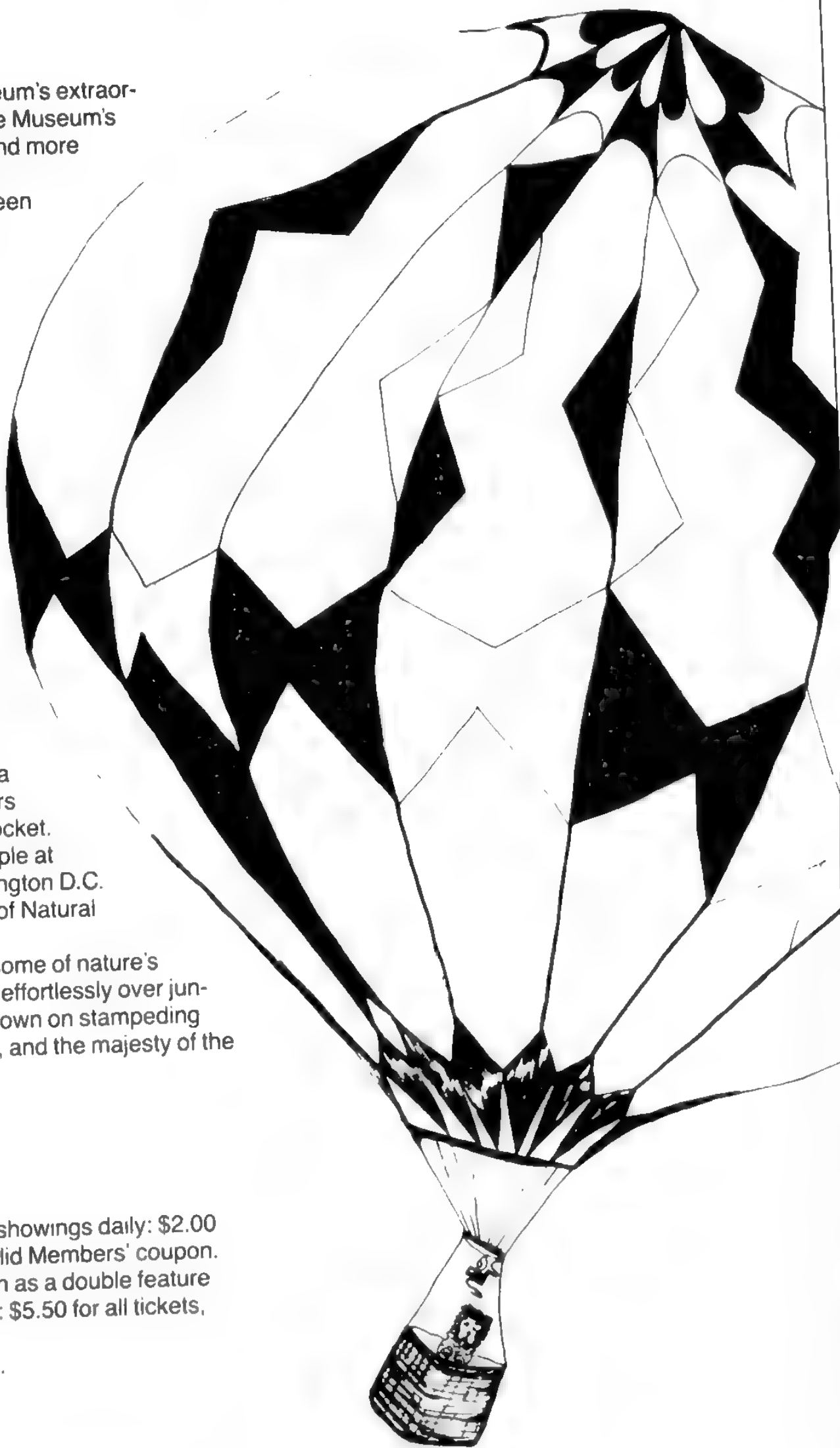
The Films: **TO FLY** is a breathtaking history of aviation in America—from the lazy flight of a hot air balloon over Vermont two hundred years ago to the explosive blastoff of a B-1 Saturn rocket. **TO FLY** has delighted more than 5 million people at the National Air and Space Museum in Washington D.C. and has now come to the American Museum of Natural History for an extended run.

LIVING PLANET will take you on a tour of some of nature's and civilization's most awesome works. Skim effortlessly over jungles, cities, deserts and waterways, looking down on stampeding wildebeests, snow-covered mountain ranges, and the majesty of the Taj Mahal and the cathedral at Chartres.

Schedules and Prices: **TO FLY** continuous showings daily: \$2.00 for adults, \$1.00 for children, or free with a valid Members' coupon.

TO FLY and **LIVING PLANET** will be shown as a double feature Fridays and Saturdays at 6:00 and 8:00 p.m.: \$5.50 for all tickets, or free with a valid Members' coupon.

For further information call (212) 496-0900.



Sun

Mon

Tue

Wed

Thu

Fri

Sat

Call for Volunteers! Volunteers are needed from 10:00 a.m. to 12:30 p.m. weekdays during the academic year to help guide school groups in the Hayden Planetarium. Call Miriam Johnson at (212) 873-1300, ext. 538 for more information

1 First Quarter (half moon)

2

3 7:45 p.m. Amateur Astronomers Association. Education Hall. Free.

4

5

6 10:30 to 4:30 p.m. *Special Members' Preview of To Fly*. Reservations required. (See article page 1.)
1:00-4:30 p.m. Black History Month African Inspirations of Rhythm, Masks and Their Meanings in the African World. Egypt Through the Eyes of L.D. Frazier. People Center. Free. (See article page 1.)
11:00 a.m. New York Map Society Rm. 129. Free

7 10:30 a.m. to 4:30 p.m. *Special Members' Preview of To Fly*. Reservations required. (See article page 7.)

8 Full moon

9 8:00 p.m. Linnaean Society Education Hall. Free.

10 7:30 p.m. New York Mineralogical Society People Center. Free.

11 Opening of the Museum's new NATUREMAX THEATER. (See article page 7.)

12 Lincoln's Birthday (Museum open)

1:00-4:30 p.m. Black History Month African Inspirations of Rhythm, Masks as Art, Quilts of the Black World. People Center. Free (See article page 1.)

14 1:00-4:30 p.m. Black History Month Black American Folk Tales, The Zulu in Historical Perspective, African and Caribbean Music People Center Free.

15 Last Quarter (half moon) Washington's Birthday (Museum open)

16 8:00 p.m. New York Entomological Society Rm. 129. Free.

17 7:30 p.m. Round Trip to Beijing. Members' Evening Program with Dr. Yin Hongfu. Reservations required. (See article page 2.)

18 7:30 p.m. New York Microscopical Society Rm. 419. Free.

19

20 1:00-4:30 p.m. Black History Month Women of the Calabash. Songs, Poetry and Tales from Africa and Black America, George Washington Carver — "The Man and his Miracles." People Center Free. (See article page 1.)

2:00 p.m. N.Y. Shell Club Rm. 426
3:00 p.m. Featherstone — Poetry and Song, with Joanna Featherstone Education Hall Free
Last day to see Patterns of Paradise

21 1:00-4:30 p.m. Black History Month Unsung Heroes, Songs Poetry and Tales from Africa and Black America, George Washington Carver — "The Man and his Miracles." People Center Free

22 First day for many of the Spring Afternoon and Evening Lecture Series (See article page 2)

23 8:00 p.m. Linnaean Society Audubon Gallery. Free
New moon

24 7:30 p.m. Lapidary and Gem Society People Center Free

25

2:00 p.m. New York Turtle and Tortoise Society Rm. 129. Free
2:00 p.m. New York Paleontological Society Rm. 426. Free
3:00 p.m. Jazz Tribute to Billie Holiday Education Hall Free

28 1:00-4:30 p.m. Black History Month Afro-Brazilian Rhythms, Origin of Gospel Music, East African Music and Folk Traditions People Center. Free (See article page 1.)

1 March

2

3 7:30 p.m. Sexual Encounters of the Floral Kind. Free and open only to Members. (See article page 2)



American Museum of Natural History

February 1982

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 6, No 5 May/June 1982



Digging Dinosaurs

Wednesday, May 26, 7:30 p.m. Auditorium. Free

In 1904, during the great rush for dinosaur bones in the Western United States, two cattlemen out riding in the badlands of Crooked Creek, Montana, came upon a partially exposed skeleton. They began to debate whether or not it was a fossil, and therefore of value. When one scoffed, saying the backbone and ribs were no more than old buffalo bones, the discoverer dismounted and kicked the tops off of several vertebrae — proving by their brittleness that they were indeed fossilized, but badly damaging the skeleton in the process. "The proof was certainly conclusive," commented Barnum Brown, the great collector of dinosaurs for the American Museum of Natural History when he paid \$250 for it, "but it was extremely exasperating to the subsequent collectors."

Not all fossil finds suffered in this way before making it into the hands of the experts, but the history of dinosaur hunting is filled with such anecdotes. This history — how the field de-

veloped and the personalities involved — will be the subject of a lecture, *Discovering Dinosaurs*, by Eugene S. Gaffney, Curator of Fossil Reptiles in the Department of Vertebrate Paleontology. He will emphasize the finds that are now in the Museum's collection — the largest in the world — and the extraordinary characters who unearthed them.

- Roy Chapman Andrews led a caravan of camels into the Gobi Desert of Mongolia, found thousands of specimens, including the first dinosaur eggs, then protected the fossils for the return trip by packing them with fur shed by his camels.
- Othniel Charles Marsh and Edward D. Cope had such a fierce rivalry that they gave orders to their collectors to leave no bones in the ground for the enemy anything that remained uncollected had to be destroyed. Storage sheds and railroad cars were sometimes broken into, and fossils were either stolen or quietly

(A) Barnum Brown and Henry Fairfield Osborn (then president of the American Museum of Natural History) at Como Bluffs collecting the first dinosaur bone discovered by Brown
(B) An exposed dinosaur forelimb at Bone Cabin Quarry, Wyo.
(C) Packing a *Diplodocus* tail in plaster to protect it during shipment
(D) Carting fossils from an excavation site on the Red Deer River to the railroad for shipment to New York

readdressed to the far reaches of the world.

The lecture, made possible by a gift from Miss Gertrude R. Jasper, is in memory of the late Barnum Brown who collected more fossil dinosaurs than any single individual in history. It will be free to all Museum visitors, and seating will be on a first-come first-served basis. Members are advised to arrive early to avoid disappointment.

Humans and Apes

Four world-renowned scientists — Jane Goodall, Birutė Galdikas, Dian Fossey and Donald Johanson — will conduct a symposium on primates and early humans entitled *Humans and Apes: Pathways in the Search for Human Origins*.

Page 3

The Fact of Evolution

A debate made famous by the Scopes "monkey trial" has had a disturbing renaissance: creationists want equal time. Stephen Jay Gould will repeat his lecture of last fall on the recent controversies between scientists and creationists.

Page 3

Summer Events

A lecture Series on the Aztecs, two natural history tours led by Sidney S. Horenstein, and a performance by six musicians playing the haunting music of ancient American cultures form the summer event list offered by the Department of Education.

Page 2

Einstein at the Planetarium

The remarkable theories of Albert Einstein and the impact they have had on our understanding of the universe is the subject of the current Sky Show at the Hayden Planetarium. An exhibit of photographs of Einstein, taken by Lotte Jacobi, that show him in the intimate settings of his house and with such friends as Thomas Mann supplements the Sky Show. For Planetarium information see *Museum Notes*.

Page 7

Correction: In the last issue, the James Arthur Lecture on the Evolution of the Human Brain was incorrectly listed at 7:30 p.m. on April 27. The correct time is 6:00 p.m.

Department of Education

Summer Events

Upstate and Up the River

June 29, July 17. Reservations required



Sidney S. Horenstein of the Museum's Department of Invertebrates is well known for his natural history tours of the urban environment. While discussing the geologic forces that created New York City and the surrounding areas, or conducting a tour of the "Fossils of Fifth Avenue", featuring fossils embedded in the building stones of the City, he regales his audiences with anecdotes and natural history.

This summer the Department of Education will offer two events led by Mr. Horenstein.

Geology at Sunset: A Cruise Around Manhattan (Tuesday, June 29, 5:30-8:30 p.m. Fee: \$18, or \$15 for Members). A three hour boat

tour around Manhattan at twilight will survey the geology of the region. Bring your own bag supper and hear about the origins of the Palisades as you cruise down the most southerly fjord in the Northern Hemisphere. Learn about the one-billion-year-old bed rock of the City, the fault near Gracie Mansion, and the place where the Hudson River once cut the Island of Manhattan in two. Sidney S. Horenstein will provide a running commentary.

A Geology Day Visit to Albany (Saturday, July 17, 9:00 a.m. to 6:00 p.m. Fee: \$55, or \$50 for Members Limited to 47 people). Traveling by bus on the New York State Thruway to the Capital

The Palisades will be one of the subjects discussed by Sidney S. Horenstein on his sunset trip around Manhattan by boat.

allows us to glimpse one billion years of geologic history. Sidney S. Horenstein will comment en route, then on arrival will conduct a building stone tour of the magnificent Albany Mall. A guided tour of the Albany State Museum is arranged for the afternoon.

To register for either of these tours, please use the coupon on this page. For more information call (212) 873-7507.

Nayjama

Wednesday, June 23, 7:30 p.m. Auditorium
\$5.00 for Members, \$6.00 for non-members

High in the Andes of Bolivia, in the region of Lake Titicaca, stands the great stone Gate of the Sun amidst the ruins of the oldest civilization

of South America — the Tiahuanacu. Long after the Tiahuanacu civilization rose and fell — and despite the rise of subsequent empires includ-

ing the Inca — the peoples of the region continued to look to the ruins of Tiahuanacu as the center of mystery and "the hidden things." This mystical reverence for their ancestors was most deeply expressed through their music.

Nayjama — a group of five musicians from Bolivia, Chile and the United States — perform this powerful and haunting music using an assortment of wind instruments of pre-Columbian origin, including *t'arkas* (wooden flutes tuned in fifths), and *samponas* (pan pipes ranging in length from four inches to more than five feet), as well as several types of drums. Their performance evokes the feeling of the festivals and rituals which are still a vital element of community life in the mountain villages of South America. In addition, the group offers an impressive selection of the music that has evolved through the blending of Spanish and native cultures in the Altiplano.

To order tickets please use the coupon on this page. For more information call (212) 873-7507.



Nayjama plays the music of the ancient Americas on instruments of pre-Columbian origin

Aztec Worlds

Four Thursday evenings beginning July 8
7:30-9:00 p.m.
\$22.50 for Members
\$25.00 for non-members



Ironically, although the Spanish destroyed the Aztec empire in 1521, the conquistadors wrote detailed, illustrated accounts of Aztec customs and daily life. From these we know more about the Aztecs than about any other Mesoamerican people.

As a prelude to the opening of the exhibition *Aztec Mexico: Discovery of the Great Temple*, Dr. Esther Pasztor of the Department of Art History and Archeology at Columbia University will discuss Aztec culture in the context of the broader development of civilization in Mesoamerica. The unique art and architecture of the Aztecs will be analyzed both in a religious and historical context, and their social, economic and religious systems will be explored.

July 8 Aztec History and Religion. The first session introduces Aztec ideology, the calendar and religious system, and compares the Aztecs' view of their history with what the archeological record reveals.

July 15 Architecture and Sculpture of the Aztec Capital, Tehochtitlan. In this session

the evolution of Aztec monumental sculpture is analyzed from its imitative beginnings to the great sculptures, such as the *Coatlicue* and the *Calendar Stone*.

July 22 The Elite and Popular Arts. This session contrasts the Aztec concept of treasure — the elite arts of gold, feather and lapidary work — with the stone and terracotta images of the deities of commoners. The role of the Aztec artist will be discussed using 16th century texts and Aztec poetry.

July 29 (5:30-7:15 p.m.) Private Viewing of the Exhibition *Aztec Mexico: Discovery of the Great Temple*.

Templo Mayor. Recent excavations of the temple give insight into Aztec history, religion, and economics. Five thousand buried offerings have been excavated so far, including imported objects and heirlooms. The social, economic and religious significance of burying precious objects within the temple complex will be highlighted.

To register for the course, please use the coupon on this page. For more information call (212) 873-7507.

Summer Events Coupon (See articles for prices)

	Number of tickets	Price	Total
Nayjama	X	\$	= \$
Aztec Worlds	X	\$	= \$
Geology at Sunset	X	\$	= \$
Geology of Albany	X	\$	= \$
Total amount enclosed: \$			(Only Participating Donor and Elected Members may take the discounted Members' Price)

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime phone: _____

Membership category: _____

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Summer Events, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

The American Museum of Natural History
In cooperation with the L.S.B. Leakey Foundation presents a symposium

Humans and Apes: Pathways in the Search for Human Origins

Saturday, May 15, 2:30 to 9:00 p.m. (Intermission 5:00-7:00 p.m.)
Hunter College Assembly Hall
\$12.50 or \$10.00 for Members, \$15.50 or \$12.00 for non-members

The Participants

Dr. Jane Goodall: (right) Director, Gombe Stream Research Centre, Tanzania; Visiting Professor in Zoology at the University of Dar es Salaam; author of *In the Shadow of Man*; Honorary Foreign Member of the American Academy of Arts and Sciences. Dr. Goodall is a pioneer in the study of primate behavior. She has been studying the wild chimpanzees of the Gombe Stream Reserve for more than twenty-two years.



Baron Hugo Van Lamsweerde/National Geographic Society



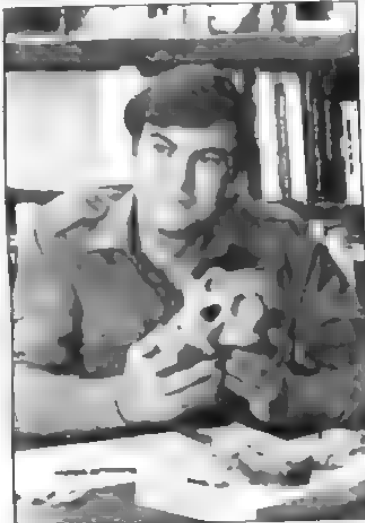
Rod Brundamour/National Geographic Society

Dr. Biruté Galdikas: (above) Director, Tanjung Puting Research Centre, Borneo; Visiting Professor of Archeology, Simon Fraser University, Burnaby, British Columbia. For the past ten years, Dr. Galdikas has documented the orangutan's social structure and semi-arboreal habitat in a remote tropical forest in Central Indonesia.

Dr. Dian Fossey: (below) Project Coordinator, Karisoke Research Centre, Rwanda; Visiting Professor of Anthropology, Division of Biological Sciences, Cornell University. Dr. Fossey's fourteen years of intensive study of the mountain gorillas have shed new light on the behavior and ecological aspects of this endangered species.



Beth Campbell/National Geographic Society



Teddy Run

Dr. Donald Johanson (Moderator): (above) Director of the Institute for Human Origins; co-leader of the International Expeditions to the Afar Region, Ethiopia; co-author of *Lucy. The Beginnings of Humankind*. Dr. Johanson has won international acclaim for his remarkable discoveries in the search for evidence of human origins and evolution. Three successive field seasons in the Afar have yielded fossil remains of human ancestors (including the "Lucy" skeleton) which have been dated as more than 3.5 million years old.

The Symposium

These four world-renowned scientists will discuss the great apes and how studies of their behavior have contributed to our understanding of human evolution. Areas of discussion will include the forms of play and aggression of the different apes, their use of tools, the social structure of primate societies, and the influence of environment on their social behavior.

This symposium has been advertised in both the March and April issues of *Rotunda*. As of press time some tickets still remained. To order tickets please use the adjacent coupon.

The Politics of Creation

Wednesday, June 9, 7:30 p.m. Auditorium
\$2.00 for Members, \$4.00 for non-members

On January 5, 1982, the Federal District Court of the State of Arkansas ruled that the term "creationist science" was a misnomer and that schools were not obligated to teach the biblical story of creation as a scientific alternative to evolution. Although the Arkansas defeat was a major setback for the creationists, they are now gearing up for another fight in Louisiana.

Stephen Jay Gould, award-winning columnist for *Natural History* magazine and a key witness at the Arkansas trial, will return to the Museum by popular demand to repeat his lecture, *The Fact of Evolution - The Politics of Creation*. In this slide-illustrated lecture, originally given last October, Dr. Gould

will discuss the fact of the evolutionary process and the theories that surround it. He will then focus on how the creationist movement distorts scientific principles to misrepresent these theories and support their own beliefs. Because they have misrepresented many of his own theories, the creationists are of particular concern to him.

Dr. Gould is rapidly gaining recognition as one of America's leading scientific thinkers. He is the author of two critically acclaimed books and was recently named *Discover* magazine's Scientist of the Year.

To order tickets, use the adjacent coupon. Early reservations are strongly advised.

The Fact of Evolution - The Politics of Creation

I would like to order tickets for the Stephen Jay Gould lecture. Participating, Donor, and Elected Members are entitled to four tickets at the Members' price of \$2.00. Associate Members are entitled to one. All other tickets are priced at \$4.00.

Members' Tickets at \$2.00 each	\$
Non-member tickets at \$4.00 each	\$
Total payment enclosed	\$

Name _____

Address _____

City _____ State _____ Zip _____

Daytime phone _____

Membership category _____

Please make check payable to American Museum of Natural History and mail with a self-addressed, stamped envelope to Gould Lecture, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. **After June 1st, call (212) 873-1327 for ticket availability.**

Humans and Apes: Pathways in the Search for Human Origins, May 15.

2:30-9:00 p.m. (Intermission from 5:00-7:00 p.m.)
Participating, Donor and Elected Members are entitled to up to six tickets at the Members' prices. Associates are entitled to two. Students with I.D. are entitled to one.

Number of Members' Tickets:		
Orchestra and Mezzanine	X \$12.50	\$
Rear Orchestra and Balcony	X \$10.00	\$
Number of Non-members Tickets:		
Orchestra and Mezzanine	X \$15.50	\$
Rear Orchestra and Balcony	X \$12.00	\$
Total Payment Enclosed:		\$

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Humans and Apes*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

ROTUNDA

ISSN 0194-6110

Vol 6, No 5
May/June 1982

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kim Hamilton — Membership Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Tel. (212) 873-1327. © 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Printed by Waldon Press, Inc., New York

Letter from Port Royal, Jamaica

Marine Treasures in a Pirate Cove

Dr. Judith Winston is an assistant curator in the Museum's Department of Invertebrates. In this excerpt from her journal she captures the color of Port Royal, Jamaica — both underwater among the coral reefs, and on land among the islanders

Monday, 19 November, 1979

Waking at Port Royal. Good to be here, even after the exhausting business of hauling the boat over the mountains. There's a slower pace and a seaside feeling that's lacking on the north coast

We arrived last night. Sunday night is the easiest time to get a boat through downtown Kingston. After the airport roundabout, the road continues for several miles through sand-dune scrub and mangrove swamp. A long sand spit called the Palisadoes encloses Kingston Harbour. On the right is the harbor, on the left the main shipping channel, and beyond that the barrier reef. Between the Palisadoes and the barrier are some tiny islands — the Port Royal Cays. The sheltered reefs around them offer a great contrast to the exposed environments on the north coast

At the end of the Palisadoes lies Port Royal itself. Today it's a quiet fishing village, but the ruins of the pirates' city still exist at the bottom of the harbor, under forty feet of water and mud, where it was swallowed up by the ocean in the earthquake of 1692. Now the town consists of a few rows of brightly colored houses, an old church, and several forts, some ruined, some still in use. The University of the West Indies has a marine laboratory there, sandwiched between an old naval hospital (now an archeological museum) and the police training academy. Beyond the police school lies Fort Charles and the Coast Defense Buildings, and beyond that only Gallows Point.

I study bryozoans, manne animals who colonize the hidden parts of the coral reef: the undersides of the corals, the crevices, and the caves. They cannot be seen without breaking off the corals, so to study them one has to fool their offspring into settling on the undersides of asbestos panels placed in the sea. I have set up experimental panels at three places in Jamaica to investigate the bryozoans' life histories and their contribution to the reef community. Two sets are on reefs located near the Discovery Bay Marine Laboratory on the north coast, and one set is in the Cays here off Port Royal.

My assistant Frank Sullivan is an expert at backing up the trailer and sliding our boat into the water. By 8:30 a.m. we are on our way to put out sediment traps at our sites and to collect the first set of panels. The wind had been blowing hard over in Discovery Bay — the kind of weather they call a "dry North'er" — but the storm can't get over the mountains. Somehow the collision of air masses has cancelled the southeast wind that normally blows here. I've never seen the water so calm. Usually it is opaque from quantities of fine sediment stirred up by the winds and currents, but today, as we anchor, we can see the bottom twenty-five feet below.

Such clear still water
A hundred minnows hover
Over every coral head

We have placed panels in two depths at each location. The shallow panels (in 10 meters or 33 feet of water) are just to the west of Drunkenman's Cay. Our panels have been in the water eight months and the plant and animal life growing on them is already greater than it is on those placed on the north coast reefs. At the first census this summer I found that many of the panels were covered with small oysters (of three different species) and with gelatinous colonies of tunicates (commonly called sea squirts) but there were many young colonies of bryozoans as well. As we place the panels in tanks of seawater for the trip back to the lab I wonder how the bryozoans are doing.

The north coast laboratory on Discovery Bay seems detached from the rest of the island. Living on the compound brings with it a kind of isolation. We are strangers in town. Its activity goes on around us. It can't have changed much from what I've read of it in the old journals. How many families here are the "old families"? Racially, it is a mixed population people with blond hair, light eyes, all shades of complexion, all varieties of build and physiognomy.



J. Winston

Whatever the population, at least half of them are under sixteen. The children race around under the street lights as Frank and I walk to the Fishermen's Co-op for supper. The restaurant section has dingy walls, worn benches, tables with faded formica tops attached to wobbly, green, wooden legs. Even in winter it's almost unbearably hot. If the shutters were open we'd have a view of the shrimp boats and the lights of the city across the harbor. As it is, we can look out the open door and watch the Kingston-bound Port Royal Ferry, a box-like craft that looks like a city bus that has floated into the harbor by mistake.

Men, women and children drift in and out of the kitchen; the reggae music and raucous voices from the bar section are almost deafening. There's a choice on the menu tonight (oxtail stew or "fry chicken"). It hardly matters, however. I know from experience that they only have two flavors here — curry and hot pepper. I think that these will both be hot pepper dishes. We have the chicken (with hot peppers, rice and tomatoes), quite a good bargain for J\$4.00. Back to the lab and the panels.

Tuesday, 20 November, 1979

Still very calm. I've never seen the harbor like this at noon time. The only trouble with calm water in Kingston Harbour is the refuse that accumulates in it. Some of the refuse is useful, however: plastic bags cannot be purchased here, and we need some in which to wrap the short-term panels. Frank and I have a fishing expedition. He directs the boat while I stand in the bow, harpooning plastic bags with an oar. The largest and most abundant representatives of the plastic bag family are the bread bags. The most common species is the red-yellow-and-blue-spotted *National Weekender*, making up three quarters of all bags taken. Most of the rest are *Hanna-town Bakery* Hardo breads. We find the occasional chicken bag, the completely transparent vegetable bag, the rare paper-napkin bag or toilet-tissue bag. But 90% of the fauna are bread bags. Does this sampling represent the true balance of the community?

The work in the lab goes slowly. I can scan and draw only 4 cm² at a time. There are 250 cm² per panel, and it is taking me four to five hours per panel for the 20 meter set. So far I have only found

one colony (a *Steginoporella*) of any of the three species that are most abundant in the natural community (*Steginoporella*, *Reptadeonella*, *Stylopoma*). The other new colonies almost all belong to three species. *Celleporaria aperta* is the most common (sometimes half a dozen larvae have settled in 1 cm²). All but the tiniest colonies of this species have bright red embryos in their blood chambers (ovicells). But they are short-lived: the colonies that have survived more than five months are fouled and senescent, the zooids are no longer producing embryos, the ovicells are empty.

These ephemeral lives
Youth, maturity, senescence,
Right beneath my eyes

A *Parasmittina* species is the second most common. The whitish patches of its colonies are tinted orange by the embryos they contain. Some colonies present in the first census are still looking healthy, but on close examination one can see areas patched and repaired with irregularly shaped zooids. These portions apparently regenerated after being gouged out by some predator. This partial predation doesn't seem to have occurred with the third species, *Rhynchozoon spicatum*, but its zooids have strong walls with pointed spines that stick up protectively.

Have to stop work to look at the sunset. We don't see them over the water like this in Discovery Bay. But just as there, the fishermen here are heading out to the reef in their small canoes for the night fishing. One shrimp boat goes out also.

Twilight
On the warm rocks of the seawall
Ants still scurrying home

The hills black,
Until a black freighter
Passes

Wednesday, 21 November, 1979

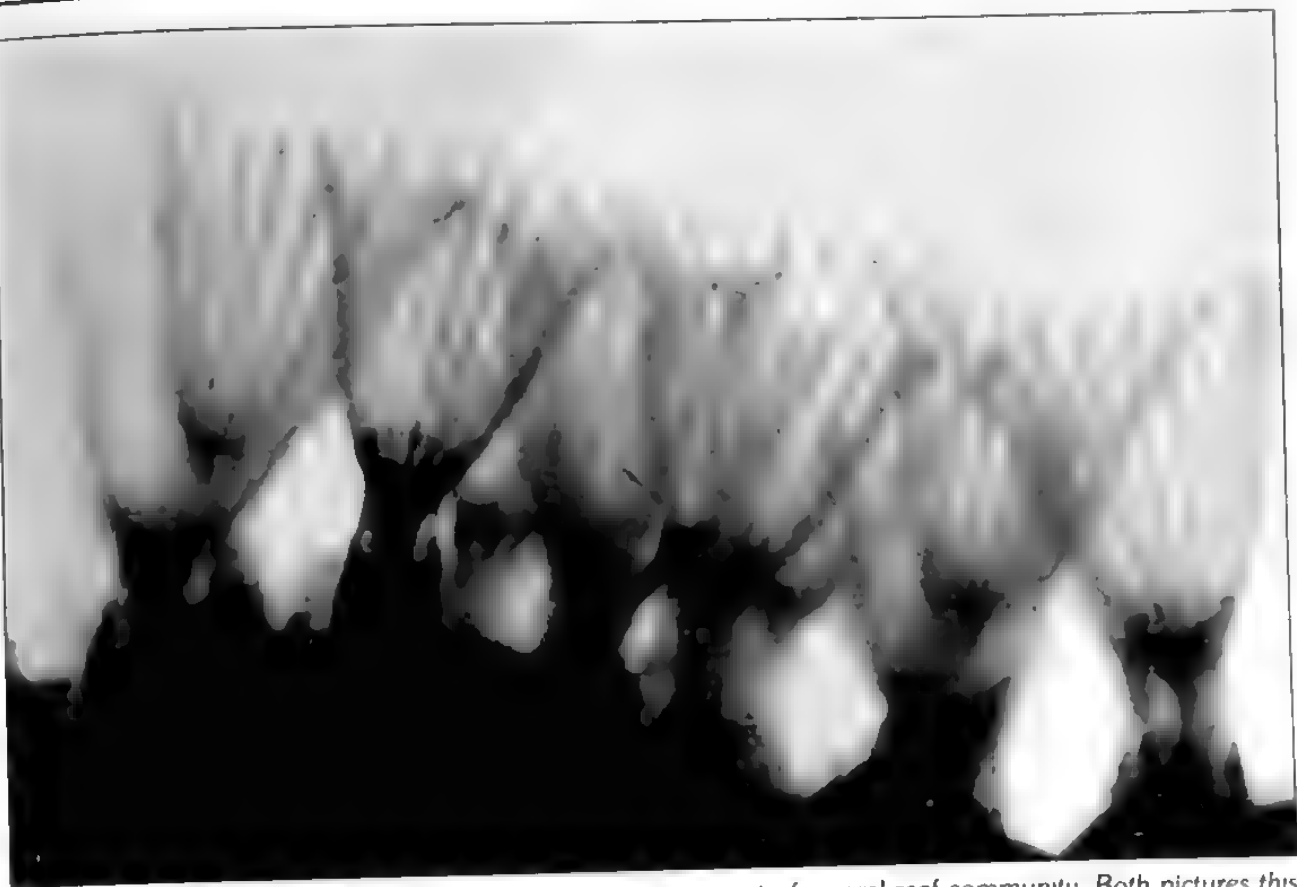
A rock is
A rock, not a reef.
To a tern

Our deep site is on the East Middle Ground, a coral bank behind Southeast Cay. Only four or five bits of rock (each usually capped by a tern) rise above the surface. We anchor by the northernmost one. To the south we look out at Southeast Cay and the barrier reef, to the north, the shipping channel, the low line of the Palisadoes, and beyond that the glistening white of Kingston backed by a blue wall of mountains. The panels are in twenty meters of water at the base of the steeply sloping lee side of the bank.

Rising to the surface
At eye level — the white city.
The cloud covered peaks



J. Winston



Bryozoans are colonial animals that make up an important part of a coral reef community. Both pictures this page show bryozoans extending their tentacles to feed on plankton. Above is a group of *Watersipora subovoidea*, and those below are *Celleporaria albirostris*. Both pictures are magnified.

Back at the dock one of the University of West Indies students, Guy Harvey, comes and asks us if we have any air left. One of the Coast Defense divers needs to do a hull inspection, and all of their tanks are over on the north coast at Braco where they are training new divers this week. I have 1200 pounds left, and soon a short Latin-looking diver, Mike Rodriguez, comes to borrow it. He is pleased and so am I. "In Jamaica, one hand wash the other one," Guy says, and the Coast Defense divers have helped us in the past.

You would think that scrutinizing panels centimeter by centimeter would get boring, but there are always surprises. On the first census I noticed a new kind of worm tube with beautiful colors — brown, orange and purple — and with high-spouted coils. Now the tubes have grown larger, and when I take a closer look I am quite startled to find they are not worm tubes at all, but belong instead to vermetid gastropods, snails that make their shells as a tube. Cautiously they stick out their heads, four delicately probing tentacles, two beady black eyes and an enormous mouth. In the still water of the dish they get busy feeding. They catch food particles by spinning out a mucus net, which looks a bit like a spider web, and then sucking it back in. I am enchanted to discover them. Maybe I will forget bryozoans and study vermetids. Brooding on this as I work, the afternoon passes rapidly, and I go out to find that the sun has already set.

Thursday, 22 November, 1979

Early morning
With just a few shouts, police recruits
Line up for breakfast

Two masts and a trail
Of smoke above the mangroves, a freighter
Slips around Gallows Point

At Drunkenmen's Cay the surface is calm, but a strong current tugs at our buoy. The water is murky again: from the side of the boat I can barely make out the bottom. The panels come up easily. Most of the oysters are dead, many of them drilled by *Murex*, an ocean-dwelling mollusk. There is a *Murex* right on one of the panels. I think a few more bryozoans have settled where the tunicates have sloughed off. Frank brings up a question: "How can we take two-dimensional measurements (the photographs, drawings and point counts) of such three dimensional surfaces?" "Just ignore it," I say, "because we are only looking at the flat encrusting species." But in fact these oyster shells (live and dead) are adding new surfaces on which encrusting organisms like the bryozoans can grow. I can see one colony of *Rhynchozoon spicatum* that has grown to reproductive size on a shell. I'm sure that the dead shells won't stay attached to the panels much longer, but how important is this space resource to species that can reproduce in that amount of time?

After we've placed the panels in tanks in the boat we make another dive to look for some fan worms

for one of the University classes. Frank has the hammer and chisel. I swim off at a distance. Every time I see a big one I give it a good poke to make it retract into its tube: the students don't need them all! Then back to the lab.

Noon sun on the pavement
A dog and a large cockroach
Share it as equals

Friday, 23 November, 1979

Friday morning,
Awakening to the sound of drums
Police recruits parade.

Taking my coffee I go sit on the ancient seawall in front of the lab and watch the marching recruits in their blue uniforms. Almost all of them are of a very dark complexion, which is generally an indicator here of a lower class background. What attracts them? Not the quality of music, judging by the sound, anyway! They practice marching to different cadences, one with a funereal beat. I read in the Daily Gleaner of at least one police death in action each week — not a long or a secure career.

The woman who does the housekeeping arrives for work. She must be sixty, but she skips along the seawall like a girl, swinging out over the water around the wire fence that demarcates the museum property, and hopping up on a wooden box to reach the lab. This is the local shortcut. In spite of protests by the laboratory staff, everyone traverses the waterfront.

This morning at Drunkenmen's Cay the bottom is not visible at all. We're glad to have the buoy line to guide us as we swim down through the greenish-tan gloom. Once on the bottom it's not so bad, although colder than yesterday. From where I kneel attaching panels to the transfer bar I can just make out Frank working at the other end of the rack, twenty feet away. Looking back, the elkhorn coral thickets toward the crest of the reef are faintly backlit by the morning sun. An *Echinometra*, the rock-boring urchin, is on the undersurface of short-term panel number three. Few new oysters have settled in comparison with the number at the July census (What is their spawning season here, I wonder?) There are mats of algal-sediment on the upper surfaces of the panels, which usually indicates calm water conditions. In spite of the amount of sediment covering everything, however, very little has collected in our sediment traps this week — probably because the water has been so exceptionally calm. As we swim up, moon-jellyfish pulse by, swimming perpendicular to the bottom.

Back at the lab, University of West Indies Professor of Zoology Ivan Goodbody arrives. After trading observations on the various guises of the tunicate *Diplosoma*, I'm glad I work with bryozoans. At least I am pretty certain I can tell one species from another. But these colonial tunicates have so many forms and color varieties within a species! I still think I must be getting ten species of tunicates settling on the panels.

The ten meter panels are going fast — each has

only a few bryozoan colonies. I'm amazed that any have survived amid the oysters, sponges and tunicates, but they are tough. Some colonies have persisted, and a few new ones have managed to settle.

A lot of activity this afternoon. Frank photographs the short-term panels while I examine the long-term ones. We photograph some fish for Guy and Howard (the hands are still washing each other). For a while the lab looks and smells like a fish market. Peace descends. Everyone's gone. It's Friday evening.

Friday evening
At the police academy night
Skirts and dresses bloom

Meanwhile, I still have panels to look at. The sponges fascinate me now. Seeing them in water, made of water, making water flow. I can almost imagine that with careful study I could come to understand them.

The microarchitecture
Of the sponge, another kind
Of "watercourse way"

The giant sponges of the reef have never tempted me to research, but these encrusting sponges — filmy networks, delicate galleries — do. One red one sometimes contains redder embryos within its galleries, which means that the reproduction of individual colonies could be followed over time. I don't know that anyone has ever done that for a sponge. And I must learn more about the serpulids, a family of tube worms with lovely tentacles. There are five or six kinds, I'd say, judging by their tubes. But I don't think they are distinguished by these; doesn't their taxonomy depend on those bugle-like projections with which they open and close their tubes?

To a silent bugle
Flourish, the serpulid's crown
Slides from its tube

10:00 p.m. The last centimeter scanned, the five thousandth for the week; the last bryozoan colony drawn, about the five hundredth. The first Red Stripe beer passed my lips shortly before that point. I admit Frank went off to the University at 4:30 this afternoon where the Zoology department was taping a keg. I was very sorry not to go, had planned to, in fact, but I knew that if I did I would be up half the night finishing the panels. Besides, tomorrow we have to dive at both sites, return all the panels, collect our sediment traps and gather our gear together — all before the long drive back.

Frank brought some beer back with him, however, and I had one as I finished the last grid. One more beer now, and then some reading before sleep. Already saw the moon go down.

Judith C. Winston



Folk Performance in New York

Saturday, May 15, 10:30 a.m. to 4:00 p.m.
Education Hall. Free

New York City's diverse cultural and ethnic background gives rise to many types of folk performance, ranging in character from traditional forms, associated with religious rituals or historic events, to those characteristic of today's society and urban "culture."

From the Street to the Stage is a day-long symposium on folk performance in New York. Using illustrated presentations as well as live performances, the symposium

explores the richness and diversity of performances in the city and offers a fresh perspective on some of these festive occasions.

The morning session will begin with an address entitled *The Invisible Theater: Folk and Festival Traditions in New York*. Following this there will be four illustrated presentations of specific folk performances. *Dancing the Giglio* (an Italian Saint's procession in Brooklyn), *From Masquerade to Folk Drama* (Purim among

Hasidim in Brooklyn); *The Passion Play of Union City* (a folk performance in the German tradition); and *An Urban Performance Environment* (Sunday in Washington Square Park).

The afternoon session will begin with the premiere of *It's One Family - "Knock on Wood"* (30 mins). This documentary by award-winning filmmaker Tony de Nonno portrays the remarkable Manteo family. Continuing an age-old Sicilian tradition, they

carve and decorate life-size marionettes, then bring them to life in performance.

After the film, members of the Manteo family will demonstrate the difficult art of working with these large marionettes, and discuss the Sicilian folk tradition of marionette performance. (On Sunday, May 16, the Manteo family will perform with their famous marionettes. See article this page.)

Moderating the symposium will be Yael Zerubavel, Chair-

person of the New York City Chapter of the New York Folklore Society and coordinator of the program. The program, presented by the New York City Chapter of the New York Folklore Society in cooperation with the Department of Education has been made possible by grants from the New York State Council on the Arts and from Young Filmmakers/Video Arts. It will be free to all Museum visitors. Seating will be on a first-come first-served basis.

Manteo Sicilian Marionette Theater

Sunday, May 16, 12:00, 2:00 and 4:00 p.m. Education Hall
\$5.00 for Members, \$6.00 for non-members

In conjunction with the symposium *From the Street to the Stage: Folk Performance in New York*, the Manteo family and their Sicilian

Marionette Theater will perform an episode from the Renaissance poem *Orlando Furioso*.

For more than a century,

the Manteo family have performed with life-size marionettes. Standing four to five feet tall, their marionettes are hand-carved from wood, and are carefully painted so that each has its own special character. They weigh between 65 and 125 pounds apiece — almost as much as the people who operate them — yet onstage, performing the adventures of the medieval knight *Orlando Furioso*, they engage in violent battles and graceful dances, raucous arguments and tender love scenes.

The Manteo family came to New York City in 1919, bringing with them this folk art form as it had been known in pre-World War I Sicily. The episode of *Orlando Furioso* that they will perform, with its improvised dialogue and musical accompaniment, provides a taste of this folk tradition that they have made so famous.

Following each performance by the Marionette Theater, the documentary film *It's One Family - "Knock on Wood"* will be shown. The film (30 mins), by award-winning filmmaker Tony de Nonno, is



Kate Rinzle

a portrait of the Manteo family and their art.

The program is presented by the New York City Chapter of the New York Folklore Society in cooperation with the Department of Education. To

order tickets please use the adjacent coupon.

The program has been made possible by grants from the New York State Council on the Arts and from Young Filmmakers/Video Arts.

Manteo Sicilian Marionette Theater, May 16.

I would like to order tickets for the Manteo Sicilian Marionette Theater. Participating, Donor and Elected Members are entitled to six tickets at the Members' price of \$5.00. Associate Members are entitled to one. All other tickets are \$6.00.

Please indicate a first and second choice if possible:

12:00 p.m. 2:00 p.m. 4:00 p.m.

Number of Members' tickets at \$5.00

Number of non-member tickets at \$6.00

Total payment enclosed

Name

Address

City

State:

Zip

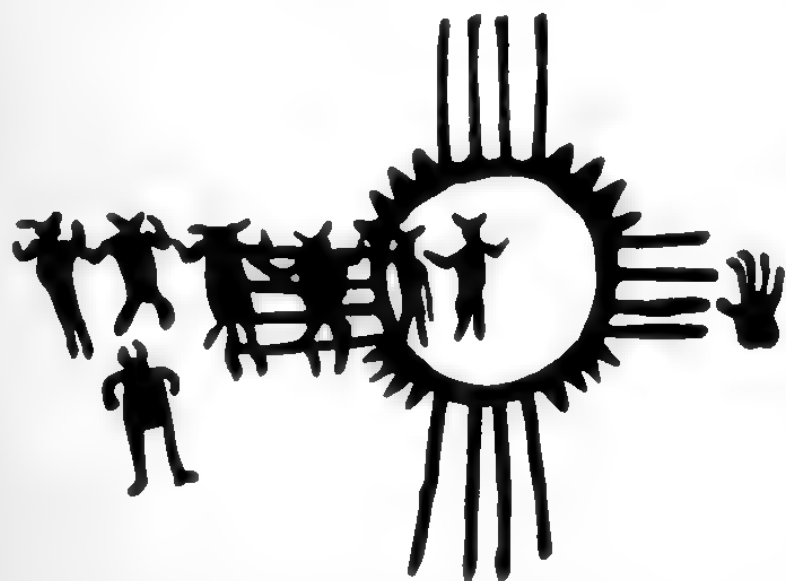
Daytime phone

Membership category

Please mail with a self-addressed, stamped envelope to Marionettes, New York City Chapter of the NY Folklore Society, 238 87th Street, Brooklyn, NY, 11209. After May 5, call (212) 836-7644 for ticket availability.

Versions of the Traditional

Wednesdays, May 5 and 19, 7:00 p.m. People Center. Free



Southwest Native American illustration

On Wednesday, May 5th, John Bierhorst will read and talk about his translations of the Aztec songs, *Cantares Mexicanos*, and supplement them with live demonstrations of ancient Mexican music. John Bierhorst is an editor and translator whose books include *In the Trail of the Wind: American Indian Poems and Ritual Orations*, *Four Masterworks of American Indian Literature*, and *A Cry from the Earth*. Music of North American Indians. His translations of 16th century Aztec songs will be published next year.

On Wednesday, May

19th, Richard Lewis will read his versions of Navaho and Hopi poetry, translated in collaboration with the late Laura Boulton. Diane Wolkstein will tell legends and myths of the Southwest Indians.

Richard Lewis, Director of The Touchstone Center, has published *Out of the Earth I Sing* and *I Breathe a New Song*. Poems of the Eskimo. His most recent book is *The Luminous Landscape: Chinese Art and Poetry*.

Diane Wolkstein is a folklorist and storyteller whose books span Persian, Chinese and Haitian tales. In addition to being New York City's offi-

cial storyteller, she teaches storytelling at Bank Street College. Among her recordings are *Eskimo Stories: Tales of Magic and The Tales of the Hopi Indians*. Her forthcoming book is *Inanna, Queen of Heaven and Earth: Her Stories and Hymns from Sumer*.

The program is presented by the Department of Education and the Touchstone Center. It is sponsored by Poets and Writers, Inc., through funds from The New York Times Co. Foundation, Inc., and will be free to all Museum visitors. Seating will be on a first-come first-served basis.

Museum Notes



As a rule, Albert Einstein did not like people to photograph him. One exception he made was with Lotte Jacobi. Einstein allowed her to photograph him a number of times in informal settings, and to document a side of him seldom seen by the world. To supplement the new Planetarium Sky Show on Einstein's universe, twenty-five of these photographs have been hung in the Planetarium Gallery. These studies show him in his study, sailing, and talking with friends such as Thomas Mann. The exhibit will run through July.

Special Exhibitions

Champions of American Sports. Through June 27. Sports paraphernalia reviving 100 of America's greatest sports legends.

Naturemax Theater Featuring the film *To Fly*, this extraordinary film experience combines a screen that is four stories tall and more than sixty feet wide with a six-channel sound system. For information call (212) 496-0900.

Horned Turtle from Down Under. Opens April 7 through June 13 on the second floor of the Roosevelt Rotunda. The first reconstruction of a bizarre fossil turtle that bore horns on its head and a club on its tail.

The Museum and the Creative Artist. Through May 31, in the Akeley Gallery. A collection of artworks that have drawn on the Museum as a resource.

Programs and Tours

People Center. Ethnic programs featuring dance, music, films, lectures and workshops are presented on some weekends from 1:00 to 4:30 p.m. For complete listings of programs see the calendar page.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour,

please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Planetarium Events

The Incredible Universe of Albert Einstein. Through August 2. The remarkable theories of Albert Einstein and the impact they have had on our understanding of the universe is the subject of the new sky show. Explore the space-time continuum, black holes, gravity lenses, $E=mc^2$, and the many other realms of his vast studies.

Sky show times:
Weekdays 1:30 and 3:30 p.m.
Weekends hourly 1:00 through 5:00 p.m.
Admission for Participating, Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices, please call 873-8828.

Laserium and Cosmic Laser Concerts Under the Stars. For information about time of performances and ticket prices, call 724-8700. Participating, Donor, and Elected Members receive a 25

percent discount on ticket prices.

Stars of the Season. Wednesday evenings at 7:30 p.m. and Saturday mornings at 11:00 a.m. Explore the solar system and learn about the very latest discoveries at this live sky show.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday 10:00 a.m. to 5:45 p.m. Wednesday, Friday and Saturday 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday and Saturday evenings from 5:30 to 7:30 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$4.85 for cars, \$6.25 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays 3:30-7:00 p.m. Saturdays and Sundays noon-5:00 p.m.

Southwestern Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit write ahead for details. Southwestern Research Station, Portal, Arizona, 85632.

Sun

6 Full Moon

13 1:00 p.m. American Cetacean Society. Rm. 319. Free.
2:00 p.m. New York Shell Club. Rm. 426. Free.

27 Last day to see **Champions of American Sports**, Gallery 3, third floor.

Mon

7 6:00 p.m. Textile Conservation Group of New York. Rm. 129. Free.

14 Last Quarter (half moon)

21 New Moon
Summer Solstice (Summer begins at 1:23 p.m. EDT)

28 First Quarter (half moon)

Tue

15 8:00 p.m. Linnaean Society. Rm. 129. Free.

22 8:00 p.m. Met Grotto, National Speleological Society. Rm. 129. Free.

29 5:30-8:30 p.m. *Geology at Sunset: A Cruise Around Manhattan*, with Sidney S. Horenstein. Reservations required. (See article page 2.)

Wed

9 7:30 p.m. *The Fact of Evolution - The Politics of Creation*. Members' Evening program with Stephen Jay Gould. Reservations required. (See article page 3.)

23 7:30 p.m. *Nayjama*. Reservations required. Auditorium. (See article page 2.)

No scheduled Thursday or Friday events in June.

Sat

5 11:00 a.m. New York Map Society. Rm. 129. Free.



Sun

Mon

Tue

Wed

Thu

Fri

Sat

The NATUREMAX THEATER is still the best show in town! Showings daily of TO FLY, with Friday and Saturday evening double-features of TO FLY and LIVING PLANET. Call (212) 496-0900 for show schedules.

1:00-4:30 p.m. Anthropology Through Television. People Center. Free.
Members' Tour of Bear Mountain Park with Sidney S. Horenstein. Reservations required

3 Last day to see **The Art of Animal Anatomy**. Center Gallery, Second Floor

4

5 **7:00 p.m.** *Versions of the Traditional*. People Center. Free. (See article page 6.)
Eta Aquarid Meteor Shower

6 **2:00 p.m.** *Women in Islam*. Gallery Talk with P. Sanagon. Assemble at first floor Information Desk. Free

7 Full Moon

8

1 **11:00 a.m.** New York Map Society. Rm. 129. Free.
1:00-4:30 p.m. Anthropology Through Television. People Center Free

9 **1:00 p.m.** American Cetacean Society. Rm 319. Free
2:00 p.m. New York Shell Club Rm 426 Free

10



12 **7:30 p.m.** New York Mineralogical Society People Center. Free

13 **2:00 p.m.** Plant Geography in North America Gallery Talk with H Schiller Assemble at first floor Information Desk Free
7:30 p.m. New York Microscopical Society. Rm 419 Free.

14

15 **10:30 a.m. to 4:00 p.m.** *From the Street to the Stage Folk Performance in New York*. Education Hall. Free. (See article page 6.)
1:00-4:30 p.m. African-American Thread Fare People Center. Free
2:30-9:00 p.m. *Humans and Apes: Pathways in the Search for Human Origins* Reservations Required Hunter College Auditionum (See article page 3.)

16 **12:00, 2:00 and 4:00 p.m.** Manteco Family and their Famous Mantonettes. Reservations required. Education Hall. (See article page 6.)

1:00-4:30 p.m. African-American Thread Fare People Center. Free
2:00 p.m. New York Paleontological Society Rm 426. Free
Last Quarter (half moon)

18 **8:00 p.m.** New York Entomological Society Rm 129 Free

19 **7:00 p.m.** *Versions of the Traditional*. People Center. Free. (See article page 6.)

20 **2:00 p.m.** Human Evolution. Gallery Talk with N. Johnson Assemble at first floor Information Desk. Free

21

22 **1:00-4:30 p.m.** Egypt People Center Free.
New Moon

23 **1:00-4:30 p.m.** Egypt. People Center. Free.

24

25 **8:00 p.m.** Met Grotto; National Speleological Society Rm 129 Free
8:00 p.m. Linnaean Society. "Evolution of a Bird Encyclopedia." People Center. Free.

26 **7:30 p.m.** *Discovering Dinosaurs* with Eugene S. Gaffney. Auditionum. Free. (See article page 1.)
7:30 p.m. *Lapidary and Gem Society*. People Center Free

27 **2:00 p.m.** *Whales, Penguins and Seals* Gallery Talk with S Buttm Assemble at first floor Information Desk. Free

28

29 First Quarter (half moon)

30

31 Last day to see **The Creative Artist**. Akeley Gallery, Second Floor.

(June calendar page 7.)

May 1982
American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 6, No. 6 July/August 1982



Treasures of the Aztecs

Opens Tuesday, July 27 in Gallery 3

In February of 1978, while installing an electrical cable, a ditch-digger in Mexico City found his way obstructed by a large piece of relief sculpture. Aware that he was working where the great Aztec temple of Tenochtitlan was believed to be, the digger did not unearth the stone himself. Instead, he and the rest of the crew stopped their work and notified the National Institute of Anthropology and History.

The stone turned out to be one of the most important and exciting archaeological finds of the century: a circular monolithic sculpture (about ten feet in diameter) depicting the dismembered body of Coyolxauhqui, an Aztec goddess. The stone lay at the base of the steep steps leading up the face of the great temple, and its discovery led to the excavation of the temple itself.

More than one hundred objects excavated from the temple, ranging from

jewelry and sculpture to human skulls, and dating from 1000 B.C. to the Spanish Conquest, will be on display in the major exhibition *Aztec Mexico: Discovery of Templo Mayor*. The American Museum of Natural History is the only stop in the United States for the exhibition, which has been in Paris and Madrid and will return to Mexico City after it leaves here.

Objects in the exhibition include masks with inlaid eyes of shell and obsidian, three large, sculpted standard-bearers, large and small ceramics painted with turquoise-blue images of the water god Tlaloc, delicate jewelry

For the special Members' viewings of *Aztec Mexico: Discovery of Templo Mayor*, as well as related lectures and a symposium, see pages 6 and 7.

Fernando Robles, Mexican National Institute of Anthropology and History

The Coyolxauhqui stone (about ten feet in diameter), discovered at the base of the steps of Templo Mayor, depicts the dismembered body of Coyolxauhqui, the defeated moon-goddess

carved from obsidian, and a cast of the magnificent Coyolxauhqui stone on which the mutilated bodies of sacrificial victims were cast from the top of the temple steps to bleed for the gods.

A special area of the exhibition will be devoted to the cultures of Mexico before the Aztec dominance. Masterpieces representing these cultures will be included, with one each from both the Olmec and Mayan civilizations.

The exhibition, organized by Mexico's National Institute of Anthropology and History and the Mexican Ministry of Foreign Affairs, will be free to all Museum visitors.

Hail Columbia

A new Imax film, *Hail Columbia*, joins the regular features of *To Fly* and *Living Planet* in the Naturemax Theater. *Hail Columbia* follows the preparation and flight of the first space shuttle, Columbia, through the suspense of its pre-launch to its thundering take-off and dramatic re-entry — all on a screen four stories tall and sixty-six feet wide. Members' coupons will be honored at all showings of the film. For new schedules and more information call the Naturemax number: (212) 496-0900.

Aztec Events

Members of the Museum are invited to special viewings of the exhibition *Aztec Mexico: Discovery of Templo Mayor*. In addition, there will be a symposium on Aztec culture, a lecture given by the leader of the excavation, and a course offered on the history and culture of the Aztecs. **Pages 6 and 7**

The African Wilderness

Join us on a summer safari as we screen four films on wildlife in Africa. Portraits of lions and giraffes are included, as well as studies of life surrounding a spring and the interrelationships of animals living in a bizarre African tree. **Page 3**

Finding the First Americans

Dr. Junius Bird made an extraordinary find in his 1935 expedition to Tierra del Fuego. It proved that the earliest Americans had reached the southern tip of South America thousands of years before scientists had believed. Excerpts from his original account of the expedition appear as a *Letter from the Field*. **Pages 4 and 5**

Poaching for Profit

Opens Tuesday, June 29 in the Hall of Oceanic Birds

Fact: The price and demand for elephant ivory has increased tenfold in the last decade. The ivory products exported in 1980 from Africa alone — 1.5 million pounds — may well have required the slaughter of more than 37,000 elephants, or one-half of the remaining population in Kenya today.

Fact: In recent years, the horn of the rhinoceros has increased in wholesale value from \$15 to more than \$300. Long reputed to have aphrodisiac qualities in India, rhino horn is now in demand as an ornamental handle for the daggers of oil-rich Yemeni men. The result has been the slaughter of 90% of the African black rhinoceroses within the past ten years.

The black rhinoceros and the elephant are just two animals among the hundreds that

face extinction because of their commercial value. Many countries have taken steps to protect them, but the demand for these animals is so high and the profit so lucrative, that millions of dollars worth of animals, pelts and ivory are smuggled into the United States every year.

Confiscated, a touring exhibit mounted in cooperation with the U.S. Fish and Wildlife Service, dramatizes the worldwide problem of illegal trafficking in endangered species. Among the hundreds of items displayed — all seized by U.S. Fish and Wildlife agents at ports of entry to the United States — are coats and other fur products made from the pelts of threatened cats, thousands of dollars worth of shoes, belts and purses made from the skins of endangered reptiles, ivory carvings and

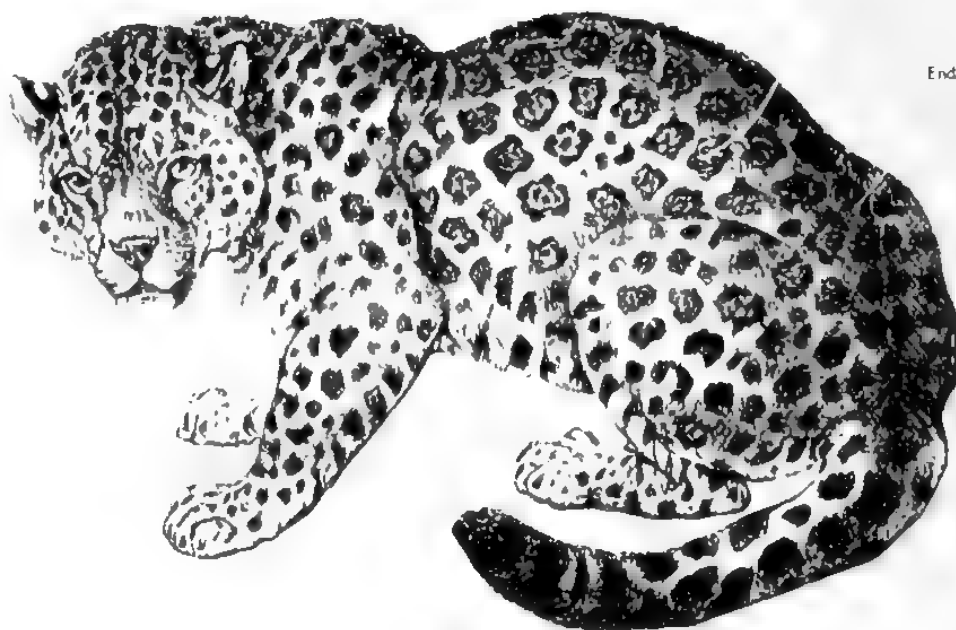
jewelry made from whale teeth and elephant tusks, and "collectables" such as rhinoceros ashtrays and stuffed baby crocodiles.

In addition to information about the seized items, **Con-**

fiscated traces the development of laws and international agreements designed to protect endangered wildlife from commercial exploitation. The exhibit is particularly timely, as the United States **Endangered**

Species Act expires under the current administration, and the Department of the Interior plans to greatly weaken the new legislation.

The exhibit will be free to all Museum visitors.



Endangered species

Symphonic Strains from China Today

Wednesday, July 28. 8:00 p.m. Auditorium. Free

In a musical experience unique even in New York City, the Brooklyn Philharmonic will appear at the Museum with a program of contemporary Chinese music, as well as a work by the Chinese-American composer Chou Wen-chung.

The conductor of the Shanghai Ballet Orchestra, Chen Xieyang, who is visiting the United States on a fellowship from the Asian Cultural Council, will conduct works

from the People's Republic of China and Taiwan. Of these works, *Chamber Symphony* by Ge Ganru will be a United States premiere.

Chen Xieyang has been conductor of the Shanghai Ballet Orchestra since 1965. He has appeared as guest conductor of the Shanghai Philharmonic Orchestra and the Central Philharmonic Orchestra in Beijing. He made his American debut in New York in December of 1981

with the Group for Contemporary Music, and this past March he conducted the world premiere of the Houston Ballet's *Zhen Ban Qiao*.

Tania León, Music Director of the Brooklyn Philharmonic Community Concert Series, will conduct *Yu Ko* by Chou Wen-chung and *Journey* by the Hong Kong composer Violet Lam. The series has pioneered music by ethnic composers for the last six years.

All of the pieces on the program are written for and performed on Western instruments but are based on traditional Chinese music.

The concert is presented by the Department of Education in cooperation with the Center for U.S./China Arts Exchange, and will be free to all Museum visitors. Seating will be on a first-come first-served basis, and Members are advised to arrive early to avoid disappointment.



Chen Xieyang will conduct the Brooklyn Philharmonic in a program of contemporary Chinese music

Charles Abbott

Wanderers in the Night

Sky Show opens Thursday, August 5

Centuries before the invention of the telescope, when the Earth was the center of the universe, and the sky circled it nightly, the planets were thought to be the gods themselves. They wandered freely through the sky, steering their courses unaffected by the backdrop of stars.

Wanderers in the Night, the new Sky Show at the Hayden Planetarium, explores the history of the planets and people's fascination with them. Beginning with the speculation of the classical astronomers, the show follows the development of our understanding of these wandering specks of light through Galileo's initial probings with primitive telescopes (he thought that Saturn's rings looked like ears!) to observations made from today's high-technology telescopes and spacecraft.

Special effects for the show include representations of the fierce volcanic activity on Jupiter's moon Io, the raging storms on the surface of Venus, the fascinating rings of Saturn, and the cold, perpetual night of Pluto.

Myths and misconceptions about the sun, moon and stars are discussed, as well as insights into their physical properties.

Participating, Donor and Elected Members receive a 25% discount on all Planetarium admissions.

Sky Show times:
Weekdays: 1:30, 3:30 p.m.
Weekends: hourly, 1:00 through 4:00 p.m.

Members' Memo

A Change of Face

If you visit the Museum during the summer months, you will undoubtedly notice the expansion and renovation of several Museum facilities. Many areas long familiar to Members will be taking on a new look. Here's a sneak-preview of what's going to happen.

The biggest project in the coming months will be the creation of the Charles A. Dana Education Center. This project, including renovations of existing facilities and a new two-story building in a small, unused interior courtyard, will provide several new lecture and activity rooms. Education Hall, site of many Members' programs, will be converted into two multi-purpose auditoriums. The People Center, which has provided "living anthropology" programs for the past ten years, will be refurbished, and now has an endowment allowing it to operate eleven months out of the year. These exciting additions to the Museum will allow us to provide an even greater and more varied selection of programs for our Members and other visitors. These facilities will be created with grants from the Charles A. Dana Foundation, the Leonhardt Foundations (in honor of Frederick H. Leonhardt), the Edith C. Blum Foundation, the Henry Kaufmann Foundation, and the Harold Linder Foundation.

Those of you who sent suggestions about the Museum cafeteria will be

pleased to learn that it too is being renovated. The cafeteria will be replaced by two new facilities, tentatively named *The Court* and *The Atrium*. *The Court* will be a bright, new fast-food service area, located where the current cafeteria stands. *The Atrium*, a glass-enclosed restaurant surrounded by a garden court filled with plants and sculpture, will provide a different type of dining ambiance. With a higher quality of food and such pleasant surroundings, it will appeal to visitors who have more time for their meal.

A glass-enclosed balcony will soon extend the Museum Shop into a mezzanine near the 77th Street elevators. The new area will be devoted to a collection of natural history books, freeing the space downstairs for a greater selection of clothing, artifacts and other beautiful gift items.

In addition to these projects, we will continue our work on the Hall of Pacific Peoples, which will open in 1983; the Hall of South American Peoples, scheduled to open in 1986; and the nearly completed anthropology storage area, providing our priceless collection with the proper conditions needed for its long term preservation.

Best wishes for a happy summer.

Henry H. Schulson

Summer Safari

Tuesday, July 20 and Wednesday, August 11. Auditorium
6:00 and 7:30 p.m. Free and open only to Members



Hippopotamuses/AMNH

Members of all ages are invited to join us this summer as we screen four classic films on African wildlife. Two of the films — *Lion* and *Giraffe* — are part of Jane and Peter Chermayeff's "Silent Safari." They have no narration, but the sounds of the animals and a guitar provide background music. *Baobab: Portrait of a Tree* and *Mzima: Portrait of a Spring* each explore the inter-relationships of life forms within the microcosm of an African environment. They were produced by Joan and Alan Root, two of the world's finest wildlife filmmakers.

Tuesday, July 20
6:00 p.m., repeated at
7:30 p.m. Giraffe (10 mins)

— This film captures the world's tallest mammal as it gallops, grazes and eludes lions on the African plains. We learn, among other things, how a giraffe goes about the challenging task of drinking water from a spring.

Mzima: Portrait of a Spring (53 mins) — This film portrays the inter-dependence of life in the Mzima springs of Kenya's Tsavo National Park. The film includes remarkable scenes of a hippo gliding slowly underwater in almost dreamlike fashion, and lounging partially submerged to provide a large if unstable platform for birds and turtles. Life at the spring moves at a leisurely pace, punctuated by sudden bursts of activity. Cormorants feed on fish, otters playfully tease a crab, a snake pursues a frog, and, in some rare footage, a crocodile devours an antelope underwater.

Wednesday, August 11
6:00 p.m., repeated at
7:30 p.m. Lion (10 mins) —
The King of the Beasts is

shown in this film in his domain on the African plains. We see his cubs frolic and romp, learning skills that will help them hunt in the future, and we witness the law of nature as a powerful lioness stalks and runs down the family's meal.

Baobab: Portrait of a Tree (53 mins) — The giant Baobab tree rises out of the African grasslands and semideserts from the Sudan to the northern parts of South Africa. Legends claim that it was planted upside down because its branches resemble tangled roots thrusting upwards. The film shows how insects, birds and other animals support each other and depend on the Baobab's huge trunk and

strange branches for their survival. We see the Wahlberg eagle high up in the branches offering defense to smaller birds from snakes and monkeys. We see the Baobab confronting elephants who use their tusks to extract the soft, pulpy interior wood. We see bush babies and fruit bats moving about the branches to lick nectar from the flowers. In one incredible sequence, a section of the tree has been replaced with a pane of glass to give us an insider's view of a red-billed hornbill's nest.

To order tickets please use the adjacent coupon. Note that both programs are offered twice: at 6:00 and at 7:30 p.m. on their respective evenings.

Participating, Donor, and Elected Members are entitled to six free tickets. Associate Members are entitled to one. Additional tickets are \$2.00 each. Please indicate a first and second choice of times if possible.

Tues., July 20 — *Giraffe* and *Mzima: Portrait of a Spring*
6:00 p.m.
7:30 p.m.
Number of People _____

Wed., August 11 — *Lion* and *Baobab: Portrait of a Tree*
6:00 p.m.
7:30 p.m.
Number of people _____

Name _____

Address _____

City _____

State _____ Zip _____

Daytime phone _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to Safari, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

ROTUNDA

ISSN 0194-6110

Vol. 6, No. 6
July/August 1982

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Membership Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y. 341

Printed by Waldon Press, Inc., New York.

Letter from Tierra del Fuego Before Magellan



Junius B. Bird in 1946

In the summer of 1933, Junius Bird found himself in a small rowboat near Baffin Island in the Arctic Circle, trying to loop a rope under the belly of a live, full-grown and very angry polar bear. He attempted this feat while other members of the Narcross-Bartlett Expedition to the Arctic Ocean (whose idea it had been to capture the animal) shouted encouragement and directions from the safety of their ship, the Morrisey. With a handful of terrified colleagues, Bird maneuvered his little craft as close as he dared to the thrashing paws and succeeded in making the pass. He had no sooner done so, however, when the angry bear reversed its course and proceeded to climb into the frail and now much smaller boat. Horrified by the gnashing jaws and barely able to keep his feet on the heaving floorboards, Junius faced the charge of the nine-hundred pound beast with no more than a dripping oar. Even well-armed hunters have been torn asunder by angry polar bears, but Junius caught the bear's black snout with a stinging thump, and the startled animal leapt backwards out of the boat.

Junius Bird was the expedition's chief archeologist, but his natural ability with boats, carpentry and certainly with animals brought him numerous other responsibilities. He was ingenious with his resourcefulness, and always willing to help a colleague in any way that he could.

On April 2, 1982, Junius Bird died at the age of seventy-four. With his passing, the Museum lost not only an extraordinary archeologist, but also a remarkable man. Like few others, he combined his scholarly genius with the pragmatic skills of one who makes his living with his hands.

His own expeditions — much smaller as he frequently took only his wife Peggy as "field crew" — were a curious mixture of scientific revelation and personal adventure. On one trip to Tierra del Fuego, with only a twenty-year-old Model T Ford for transportation and no prospects for gasoline, Junius harnessed a more abundant energy source — wind power. Rigging a makeshift sail across the back of the Model T, he and his wife sailed their Ford across the pampas. Junius was actually disappointed when, near the end of the journey, local officials filled the tank with gas. He had relished the idea of entering town under full sail.

But the Birds were hardly adventurers on a vacation lark. They went to Tierra del Fuego to do archeology.

In the following Letter from the Field, reprinted from his original account of the expedition, Junius describes this trip and his discoveries at Fell's Cave. These discoveries were of global significance, for here he uncovered proof that early humans, migrating from Asia across the land bridge and down through the Americas, had reached the southern tip of the continent as early as 9000 B.C. At the time of his expedition (1935), field work on the earliest Americans was limited to North America because it was believed that



and in 1974

their migration could not have covered such a vast distance by so early a date. His evidence, however, as you will see in this letter, was indisputable. The Fell's Cave data dramatically changed archeology's perception of the distance traversed by early humans, and declared open season in the hunt for traces of the earliest Americans all the way down the 16 thousand-mile length of the New World.

— David Hurst Thomas, Chairman
Department of Anthropology

Columbus, Magellan, Cabot, Perry — start with the Norsemen if you will — list all the explorers you can think of who have added to our knowledge of the Americas. Yet you will find few, very few, who stood where no man had stood before. From North Greenland to Cape Horn the land had been known to men for many generations. What is more, having explored it, they took with them their women and children and settled most of it.

Who were these original explorers and settlers of the New World? When and from where did they come, and how did they live? These are the questions which are bound to grow in your curiosity if you find yourself, as did Mrs. Bird and I, during a 1300-mile journey in a 19-foot sailboat, exploring a little known section of southernmost South America where some of the answers lay literally underfoot.

Two years after my first archeological expedition to the Beagle Channel at the southern tip of South America, my wife and I had made our way to Puerto Montt, Chile, one thousand miles to the north, and were preparing to launch our 19-foot cutter. We had purchased it there, and after installing a small engine and fitting new sails and rigging, we were ready to start south on a 1300 mile journey along the coast — just the two of us. We hoped to pick up the trail of the ancestors of the Beagle Channel Indians, whom I had studied previously, and to follow the trail down to that region.

On a map, the maze of islands lying along the coast of South America between Puerto Montt and Cape Horn looks as if it might be the ideal place to go cruising. Indeed, there are hundreds of miles of well-protected channels, and the scenery is superb, with mountains rising steeply from the sea to snow-crowned summits as high as 12,000 feet, and with glaciers pouring down their slopes. As an Englishman once wrote, however, the weather of the western channels is "enough to make a man's soul die within him." From the Guaitecas Islands down to the Straits



The Hesperus, a 19-foot sailboat, in which Junius Bird and his wife spent six months and travelled 1300 miles to the southern tip of South America doing archeological field work.



Out of gas on the Argentine pampas, the car sailed easily along the flats, but needed help going uphill.



As barrow after barrow-load of dirt and broken bones rattle down the sifter, the little things which add together to tell their story are picked out and laid aside

of Magellan, the annual rainfall is 120 inches or more, and it comes down in an almost steady, fine drizzle, blotting out the sun for days and weeks at a time. But I do not want to give the place a worse name than it has, and to prove that its influence is not always so bad I can only say that after five months of rain my wife and I stepped ashore from the rather cramped quarters of the *Hesperus* still on good speaking terms.

Because of the constant rain, the ground is saturated to such an extent that the first move when sifting through a midden, or refuse heap, must always be to dig a drainage ditch. This prevents the trench or pit from flooding, but does not check the constant flow which makes hip boots a necessity. The mussel shells here have gone beyond the crumbled stage and become a sticky paste. I can think of no better test of an archeologist's enthusiasm than to have him work for ten hours in the rain on one of those middens. If he is willing to do it again, he merits his title. Four specimens, counting every piece of worked bone or stone flake, represent an average day's collecting, and I have spent a full day in one large midden without finding anything.

With the coming of spring we sailed to Magallanes, a town on the Straits of Magellan, bought a twenty-year-old Model T Ford truck, and followed the northern shore of the Straits eastward, successfully locating ancient camping places of the Foot Indians.

All of this country along the eastern part of the Straits and north into the Argentine is open grassland, good for raising sheep, but it has been settled only in the past fifty years. With only a fraction of the rainfall of the forested western coast, it is hard to believe that the two regions are so near to each other. Its one unpleasant feature, a strong westerly wind, has worked to the archeologist's advantage. Because of it the Indians made their camps, whenever possible, in sheltered places, resulting in a concentration of their broken, discarded or lost belongings where they can more easily be found.

At the close of a successful summer season, most of our equipment was sent on ahead. But just before leaving Chilean territory we stopped to look at a cave which we had heard of but had not been able to visit before. Known locally as Palli Aike cave, it is near the top of an old volcanic crater ridge but is easily accessible. The interior looked promising: a dry dusty floor about forty-five feet long by twenty-five feet wide with plenty of headroom. When, after a few days' digging, it became apparent that the deposit dated from at least twice as far back as anything we had found previously, our feelings were a curious mixture of pleasure and despair. Without our regular equipment and with only a few days' supplies left, it was impossible to stay longer. It was a sad moment when we finally left to continue on through the Argentine.

The coming of spring brought word that the mountain pass was open once more. With a goal in mind, the stretches across the high plateaus did seem longer, but the hill and cave were still there, just as we had left them.

To give a new assistant training, we first cleared a smaller cave some twenty-odd miles to the west. The results were meager, so we moved nearby, beneath the wall of the canyon through which the Rio Chico flows to a place where arrow points and flakes lay on the surface. We later named this Fell's cave after the Fell family who owned the land and had led us to the spot.

At first sight, it promised to be little more than pure exercise, for many tons of stones had piled up against the base of the cliff. The inward slope of the rock suggested a cave, but it was choked almost to the top. A little digging, however, showed that there was an opening and that we could work without having to move a yard of stone for every foot of dirt.

As barrow after barrow-load of dirt and broken bones rattled down the sifter, the little things which add together to tell their story were picked out and laid aside.

The final chapter in the life of the natives was missing, there being no bones of the domestic horse, copper ornaments, trade beads, iron and other signs of contact with whites. Instead there were the finely made, small arrow points of the Ona tribe, known previously only as inhabitants of Tierra del Fuego, south of the Straits of Magellan. With them, a coarser type of arrow point proved the presence of another tribe who, though contemporaries of the Onas, had also preceded them.

Then, still further down, our digging disclosed a third type of point that had been used perhaps on spears, perhaps on arrows. During the previous season's work, this type had always marked the bottom, but in this deepening pit it disappeared while the camp refuse still continued. A single spear point of bone among the usual assortment of scrapers, without a single point of stone, confronted us with a puzzle, and then we reached what seemed to be the bottom: a jumble of lumps and slabs of sandstone covering the floor of the cave. Although there was nothing to suggest that we dig further, one of the simple rules of archeology is always to dig beyond what seems to be the bottom.

Beneath the sandstone there were still more bones, and among them we discovered a type of stone spear point new to us. That was gratifying enough, but when we realized that the bones were those of horses there came a most disconcerting feeling. The domestic horse did not exist in the Americas before the Spanish came, and if these bones proved to belong to an animal introduced by Europeans, all our conclusions on our previous work were wrong. Though I was willing to swear that 400 years was much too short a time to account for all the material we had uncovered, those horse bones momentarily gave us something of a shock.

The only alternative was that they belonged to a prehistoric relative of the common horse. An ancient horse was known to have lived in South America in times long past, but as far as I knew, no one had proved that it had still existed when even the earliest people lived here. Without special training in paleontology it was not for me to identify these bones, but it was apparent that they were of smaller, stockier animals than those in Patagonia today. Later examination proved that we had indeed found the first evidence that this ancient horse was hunted and eaten by the early natives of South America.

When we had finished the work at Fell's we had a fairly clear picture of what had happened there. An eddy of the river had undercut the sandstone and formed the cave at a time when the water was about nineteen feet above its present level. A floor of sand and clay had been built up and was still new and clean when the cave's earliest inhabitants decided that it would make a good home. It had not been used long when a section of the ceiling collapsed. That this



The find of prehistoric horse bones in association with human artifacts dated early human occupation of southern South America at thousands of years before scientists had previously believed

happened while it was actually occupied is suggested by articulated sections of a horse skeleton that were found directly beneath the stones — a leg and shoulder at one place, a head and neck at another — and by the perfect tools and weapons lying on the same level.

For some years after that, no one stayed there. With the passing of time, nature began to smooth and level the floor, so again people began to stop there. In the interval, the first group or tribe had disappeared together with the horses. The newcomers used different weapons and lived mainly on foxes and birds. From later work at Palli Aike cave we learned that theirs were the spears that were tipped with bone.

A third group's arrival is suggested by a change from bone points to a new kind made from stone and by the appearance of bolas, a very effective weapon made of two or three stone balls lashed together by thongs and hurled at birds and larger game.

Then, as abruptly as they came, the things belonging to this third group leave the picture. If we read the signs correctly, their right to the land was disputed by a fourth tribe that used small, rough arrow points. For at another site on the level of the end of this third period, two group burials were found containing the remains of nine men and women and a baby. One of the skulls shows an ugly gaping wound. The absence of weapons belonging to the third type in the subsequent debris explains the outcome.

Shortly before the beginning of Patagonia's written history, perhaps in Magellan's time, the small arrow points of the Ona Indians record the presence in Fell's Cave of perhaps its last long-term inhabitants.

Later, at Palli Aike cave, we found the same sequences, and recovered a greater amount of material to support and extend our data. Using this, we were able to eliminate some of the questions that had already arisen and strengthen our conclusions. If a guest book had been kept in the caves during the years that they were occupied, the story could scarcely have been more plainly written.

James B. Bird
(1907-1982)

The Membership Office cordially invites
Participating, Donor and Elected Members to a private viewing of

Aztec Mexico: Discovery of Templo Mayor

and a screening of the Academy Award winning film *Sentinels of Silence*
Tuesday, July 27; Monday, August 2; or Tuesday, August 3

Aztec Mexico: Discovery of Templo Mayor. This is the first major exhibition in the United States of artifacts from the great temple of *Tenochtitlan*, the ceremonial and economic center of the Aztec empire. Begun in 1978, it has been one of the most exciting archeological digs of this century. The American Museum of Natural History is the only stop in the United States for the exhibition, which showcases more than one hundred treasures from the temple ranging from painted ceramics to jewelry, and dating from about 1000 B.C. to the 16th century A.D. (See article page 1.)

Sentinels of Silence. (20 minutes. Shown continuously each evening.) This beautiful film, winner of two Academy Awards in 1972, provides stunning panoramic views of the ruins of pre-Columbian cities in Mexico. Narrated by Orson Welles and filmed almost entirely from a helicopter, the film includes visits to *Teotihuacan*, a pre-Aztec center, the Mayan centers of *Palenque* in the Lacandon jungle and *Uxmal* in the Yucatan Peninsula, and *Monte Alban*, a Zapotec center near Oaxaca.

To make reservations for one of the three evenings, use the adjacent coupon.

Please indicate a first and second choice of both dates and times.

Dates:	Times
Tuesday, July 27	6:15 p.m.
Monday, August 2	7:15 p.m.
Tuesday, August 3	8:15 p.m.

Number of People

Name

Address

City State: _____ Zip: _____

Daytime phone

Membership category

Please mail with a self-addressed, stamped envelope to
Members' Temple Viewing, Membership Office, American
Museum of Natural History, Central Park West at 79th
Street, New York, NY, 10024



Image of a seated god with two horns found in an offering at Templo Mayor. Photo courtesy of the Mexican National Institute of Anthropology and History.



Aztec Worlds

Four Thursday evenings beginning July 8
7:30 to 9:00 p.m.
\$22.50 for Members
\$25.00 for non-members

Ironically, although the Spanish destroyed the Aztec empire in 1521, the conquistadors wrote detailed, illustrated accounts of Aztec customs and daily life. From these we know more about the Aztecs than about any other Mesoamerican people.

As a prelude to the opening of the exhibition *Aztec Mexico: Discovery of Templo Mayor*, Dr. Esther Pasztor of the Department of Art History and Archeology at Columbia University will discuss Aztec culture in the context of the broader development of civilization in Mesoamerica. The unique art and architecture of the Aztecs will be analyzed in a religious and historical con-

text, and their social, economic and religious systems will be explored.

July 8 Aztec History and Religion. The first session introduces Aztec ideology, the calendar and religious system, and compares the Aztecs' view of their history with what the archeological record reveals.

July 15 Architecture and Sculpture of the Aztec Capital, Tenochtitlan. In this session the evolution of Aztec monumental sculpture is analyzed from its imitative beginnings to the great sculptures, such as the *Coatlicue* and the *Calendar Stone*.

July 22 The Elite and Popular Arts. This session contrasts the Aztec concept of treasure — the elite arts of gold, feather and lapidary

work — with the stone and terracotta images of the deities of commoners. The role of the Aztec artist will be discussed using 16th century texts and Aztec poetry.

July 29 (5:30-7:15 p.m.) Private Viewing of the Exhibition *Aztec Mexico: Discovery of Templo Mayor.*

Templo Mayor. Recent excavations of the temple give insight into Aztec history, religion, and economics. Five thousand buried offerings have been excavated so far, including imported objects and heirlooms. The social, economic and religious significance of burying precious objects within the temple complex will be highlighted.

To register for the course, or for more information, call (212) 873-7507.

A funerary urn found at Templo Mayor. Photo courtesy of the Mexican National Institute of Anthropology and History.

The Department of Education presents
**A Symposium
on Aztec Culture**

Wednesday, August 4
7:30 p.m. Auditorium. Free

Dr. Eduardo Matos Moctezuma
General Coordinator, Great Temple Project

Dr. Emily Umberger
Guest Curator of Aztec Mexico exhibit

Dr. Henry B. Nicholson
Professor of Anthropology, UCLA

Dr. Miguel León-Portilla
Author of *Aztec Thought and Culture*

Dr. Gordon Ekholm, Moderator
Curator Emeritus, Department of
Anthropology, American Museum

For information call (212) 873-7507



Excavaciones en el Templo Mayor

(lecture in Spanish)
Thursday, August 5,
7:30 p.m. Auditorium. Free

A slide-illustrated lecture in Spanish of the
history of the excavation of the great temple
of Tenochtitlan in Mexico City

With Dr. Eduardo Matos Moctezuma
General Coordinator, Great Temple Project

For information call (212) 873-7507

A Mesoamerican stone mask found during the excavation of Templo Mayor. Photo by
Fernando Robles. Mexican National Institute for Anthropology and History

Museum Notes

Special Exhibitions

**Aztec Mexico: Discovery
of Templo Mayor.** July 27
through October 6, in Gallery
3. A collection of treasures ex-
cavated from the great temple
of Tenochtitlan, the ceremo-

nial and commercial center of
Aztec Mexico. Includes masks,
jewelry, skulls and numerous
other buried offerings to the
gods. (See article page 1.)

Confiscated. Through Oc-
tober 31, in the Hall of
Oceanic Birds, second floor.
Hundreds of animal species

face extinction because of
their high commercial value.
This exhibit points up the
world problem of illegal traf-
ficking in endangered species
and the threat this poses to so
many. (See article page 2.)

Naturemax Theater
Featuring the films *To Fly* and
Hail Columbia, this extraordi-
nary film experience combines
a screen that is four stories tall
and more than sixty feet wide
with a six-channel sound sys-
tem. For information call
(212) 496-0900

Programs and Tours

**Museum Highlights
Tours.** For the new Museum
visitor as well as the veteran
Museum goer, the Museum
Highlights Tours offer fascinat-
ing glimpses into the history
and exhibits of the Museum's
most popular halls. The tours
leave regularly from the sec-
ond floor Information Desk. If
you wish to join a free tour,
please ask at the information
desks for specific tour times

Discovery Tours. The
Museum offers exciting and
unusual tours of exotic lands
in company with Museum sci-
entists, archeologists, an-
thropologists, historians, and
natural historians. For more
information about tours and
itineraries, write to Discovery
Tours at the Museum or call
873-1440

Natural Science Center.
The Center introduces young
people to the varied wildlife,
plants, and rocks of New York
City. Some exhibits include
live animals. The Center is

open Tuesday through Satur-
day, 10:30 a.m. to 12:30
p.m., and 1:30 to 4:30 p.m.
People Center. Closed for
renovations. Will reopen in
October

Planetarium Events

**The Incredible Universe
of Albert Einstein** Through
August 2. The remarkable
theories of Albert Einstein and
the impact they have had on
our understanding of the uni-
verse is the subject of the new
sky show. Explore the space
time continuum, black holes,
gravity lenses, $E=mc^2$, and
the many other realms of his
vast studies

Wanderers in the Night
August 5 through September
6. Learn the secrets of the
planets, their legends and ac-
tual origins, and what modern
science has determined about
their physical properties. Ex-
plore the fascinating history of
each from swift Mercury to
cold, dark Pluto. (See article
page 2.)

Sky show times
Weekdays 1:30 and 3:30
p.m.

Weekends: hourly, 1.00
through 4:00 p.m.

Admission for Participating,
Donor, and Elected Members
is \$2.25 for adults, \$1.25 for
children. For non-member
prices, please call 873-8828

**Laserium and Cosmic
Laser Concerts Under the
Stars.** For information about
time of performances and
ticket prices, call 724-8700
Participating, Donor, and
Elected Members receive a 25

percent discount on ticket
prices.

Stars of the Season.
Wednesday evenings at 7:30
p.m. through August 25. Ex-
plore the solar system and
learn about the very latest dis-
coveries at this live sky show

Museum Information

Museum Hours Monday,
Tuesday, Thursday, Sunday
10:00 a.m. to 5:45 p.m.
Wednesday, Friday and
Saturday 10:00 a.m. to 9:00
p.m.

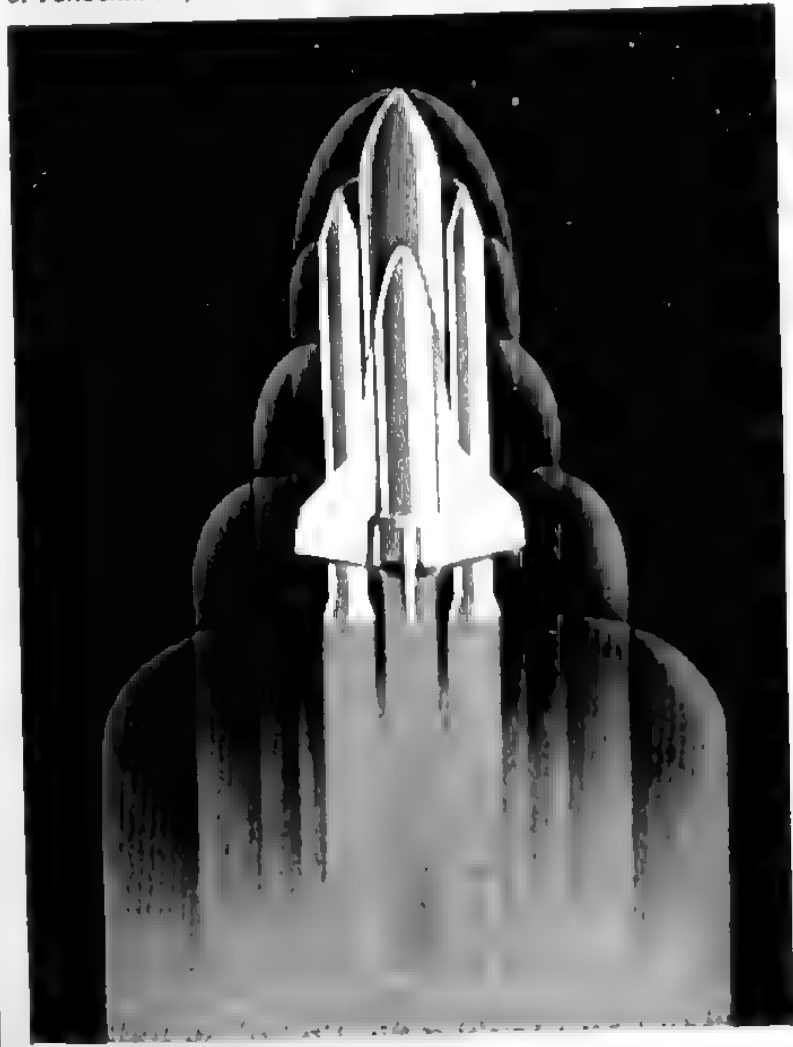
Cafeteria Hours. Daily
from 11:00 a.m. to 4:45 p.m.
Wednesday, Friday and
Saturday evenings from 5:15
to 7:00 p.m.

Terrace Cafe Hours.
Daily from 11:30 a.m. to 4:30
p.m. Wednesday, Friday and
Saturday from 11:30 a.m. to
6:00 p.m.

Museum Parking Lot.
Located on 81st Street. Open
Monday through Thursday
9:30 a.m. to 9:30 p.m. Friday
through Sunday: 9:30 a.m. to
12:30 a.m. Rates are \$5.50
for cars, \$6.50 for buses.
Parking is limited.

Lion's Lair. Relax and
enjoy refreshments with the
animals in one of the halls
Wednesdays: 3:30-7:00 p.m.
Saturdays and Sundays,
noon-5:00 p.m.

**Southwestern Research
Station.** Museum Members
have visiting privileges at this
outpost. If you are planning a
visit write ahead for details.
Southwestern Research Sta-
tion, Portal, Arizona, 85632.



The American Museum of Natural History is proud to announce
that the film *HAIL COLUMBIA* will join the films *TO FLY* and
LIVING PLANET in the Naturemax Theater. *HAIL COLUMBIA*
follows the first flight of the space shuttle through its final prepa-
ration and suspenseful pre-launch, its thundering take-off and
dramatic re-entry — all on the enormous screen of the Na-
turemax Theater. For more information and new schedules, call
(212) 496-0900.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

1

2

3

July 1982

4 Earth at Aphelion
(farthest from the sun)
Independence Day
(Museum open)

5

6 Full Moon
(Total Eclipse Visible
From New York)

7

8 First night of the
Aztec World lecture
series with Dr. Esther
Pasztory (See article page
4)

9

10

11

12

13 Last Quarter (half
moon)

14

15

16

17 9:00 a.m. to 6:00
p.m. **Geology Day**
Trip to Albany with Sidney
Horenslein \$55 (\$50 for
Members) For information
call (212) 873-7507



20 6:00 and 7:30
p.m. **Summer**
Safari. Family Members'
Program with the films
Giraffe and *Mama Portrait*
of a Spring Auditorium
Free and open only to
Members (Article page 3)
8:00 p.m. Linnaean Soci-
ety Rm 129 Free
New Moon

21

22

23

24

27 **Aztec Mexico:**
Discovery of
Templo Mayor opens in
Gallery 3 (See page 1)
6:15 p.m. Members' Re-
ception for Templo
Mayor exhibit Reserva
tions required (Page 6)
8:00 p.m. Met Grotto,
Nat'l Speleological Society
Rm 129 Free

28 7:30 p.m. **Amateur**
Astronomer Associa-
tion Star Party Outside of
the Hayden Planetarium
Free
8:00 p.m. Contemporary
Chinese Music with the
Brooklyn Philharmonia
Auditorium Free (See arti-
cle page 2)

29 Delta Aquand
Meteor Shower

30

31

I

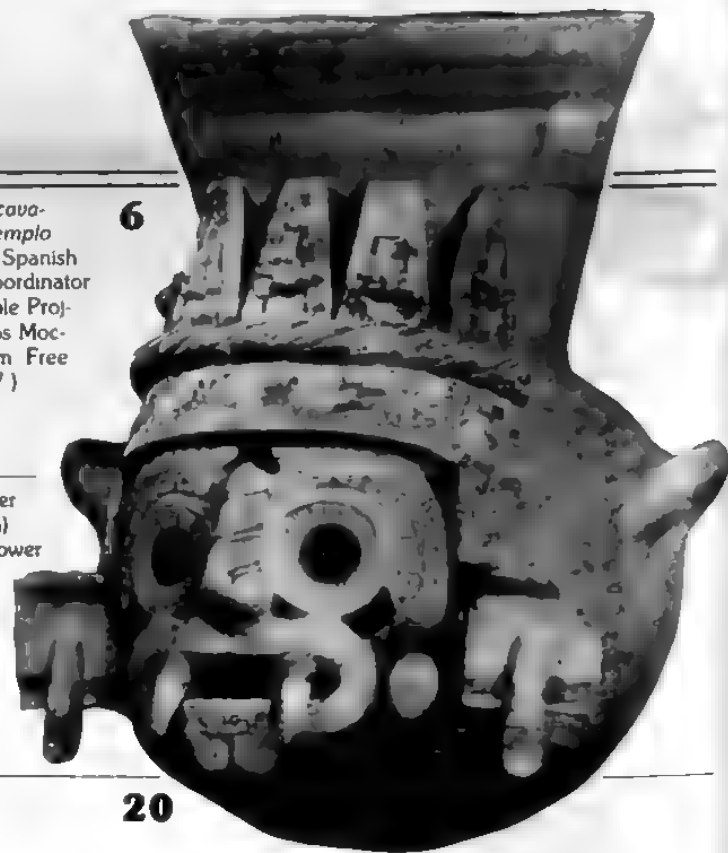
2 6:15 p.m. **Members'**
Reception for Aztec
Mexico: Discovery of
Templo Mayor Reserva
tions required (See article
page 6)

3 6:15 p.m. **Members'**
Reception for Aztec
Mexico: Discovery of
Templo Mayor Reserva
tions required (See article
page 6)

4 7:30 p.m. **Symposium**
on the Aztecs Au-
ditorium Free (See article
page 7)
Full Moon

5 7:30 p.m. **Excava-**
ciones en el Templo
Mayor Lecture in Spanish
by the General Coordinator
of the Great Temple Proj-
ect, Eduardo Matos Moc-
tezuma Auditorium Free
(See article page 7)

6



August 1982

8

9

10

11 6:00 and 7:30
p.m. **Summer**
Safari. Family Members'
Program with the films
Lion and *Baobab Portrait*
of a Tree Auditorium Free
and open only to Members
(See article page 3)

12 Last Quarter
(half moon)
Persid Meteor Shower

15

16

17 8:00 p.m. **Linnaean**
Society Rm 129
Free

18 New Moon

19

20

22

23

24 8:00 p.m. **Met**
Grotto, Nat'l
Speleological Society Rm
129 Free

25 7:30 p.m. **Amateur**
Astronomers Associa-
tion Star Party Outside of
the Hayden Planetarium
Free

26 First Quarter (half
moon)

27

28

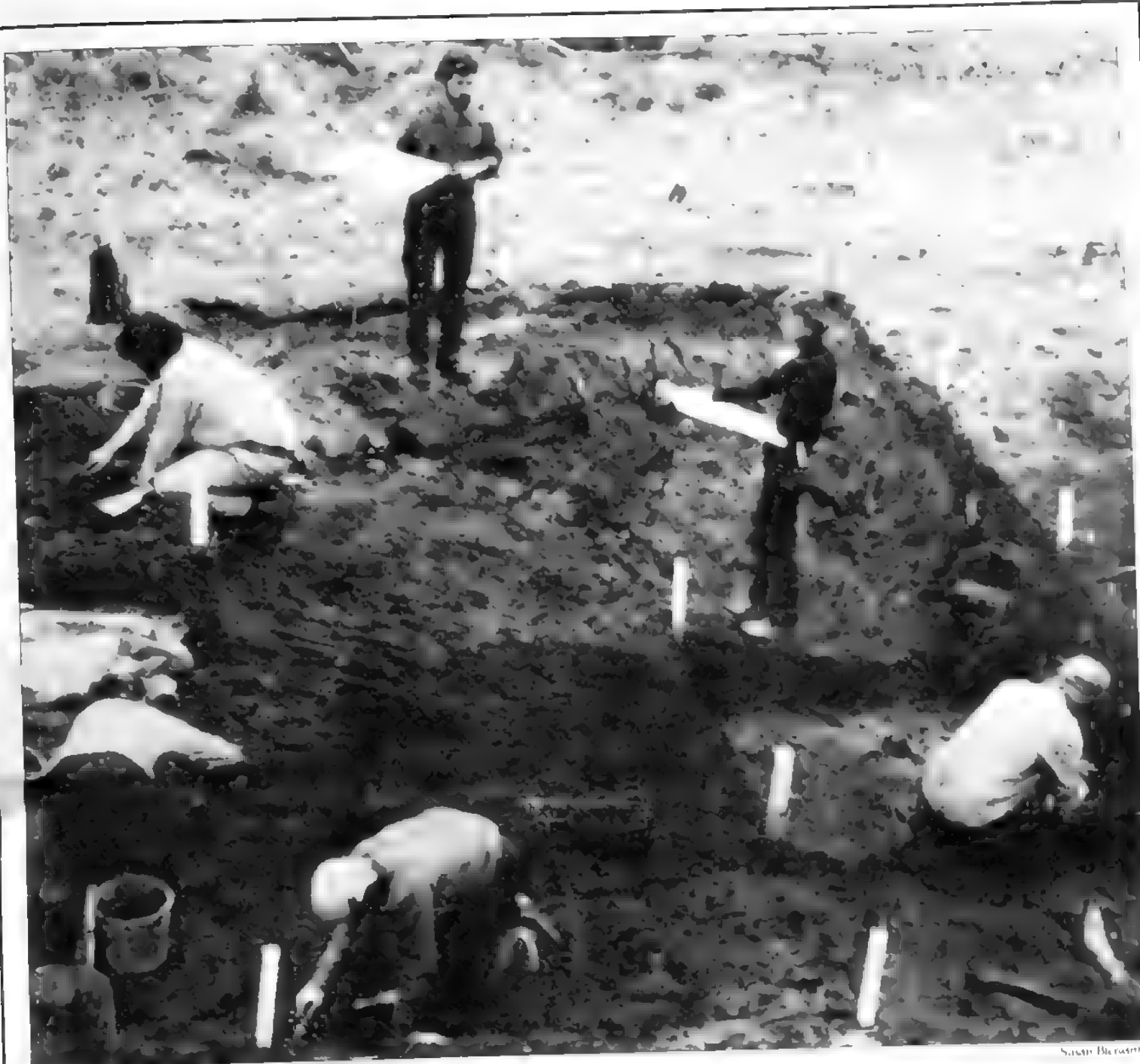


Artifacts from the exhibit **Aztec Mexico: Discovery of Templo Mayor**

American Museum of Natural History

DOTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 6 No 9 November 1982



Archeologist in the Field

Tuesday, November 30, 7:30 p.m. Auditorium
Free and open only to Members

Dr. David Hurst Thomas, Chairman of the Department of Anthropology and leader of the St. Cathennes Island archeological project, will take time out from his research to give a special Members' Evening lecture this month. Using slides and film, he will discuss the fascinating research at St. Cathennes Island, showing the development of an archeological project over time, and will announce some of the new discoveries that have highlighted this past year.

In 1974, Dr. Thomas and a group of archeologists from the Museum's Department of Anthropology began excavations on St. Cathennes Island off the coast of Georgia. They uncovered a wealth of archeological information including some of the oldest burial mounds in the American southeast. With this as an impressive beginning they launched a number of projects to explore the human ecology of the former inhabitants of the island.

Given the wealth of archeological history and information available to them on the island, Thomas and his

crew were cautious about merely mining the spectacular sites for artifacts. They were determined, for the thoroughness of the excavation, to recover an unbiased record of the past four millennia of human history on the island. First, they took a random survey of 20% of the island, surveying one hundred meter strips across its width — through rainforests, swamps, savannas and beaches — until they had a statistically unbiased data base. They then could begin to more accurately piece together the transition from the hunting-gathering way of life to sedentary village existence.

The current aim of the St. Cathennes archeological project is to document the difficulties imposed by European contact on the island's inhabitants from 100 years before the Spanish Conquest to 100 years after. Because the Guale Indians were taken to St. Augustine after the Spanish abandoned their mission at St. Cathennes, little or no primary ethnographic records exist, and the ethnohistorical sources conflict with one an-

other. The only definitive answers are in the archeological record. The lecture will also look at the amazing technology that has come into play in these excavations. Using radio carbon methods, a proton magnetometer, infra red photography, electronic resistivity, and complex computer mapping, the project can date with extreme accuracy the years that deposits were made. By using shells, which have been discovered to grow rings in much the same way trees do, they can even tell the season in which it was deposited.

To order tickets to the lecture please use the coupon on page 2.

Caribbean Festival

The music, dance, films and crafts of the Caribbean will be the subject of a month-long celebration of the Caribbean cultures. Each weekend will adopt a different focus culturally and geographically.

Page 2

Paper Magic

Once again Members may learn the subtle art of folding paper into animals, stars and geometric shapes at this year's Members' Origami Workshop.

Page 3

The Natural Selection

Give gifts of Membership this holiday season and open doors to your friends and family for a whole year. Not only do you give them *Natural History* magazine, the *Naturemax Theater* and free admission to the Museum, but you support the Museum, as well.

Page 5

The Hunt for Early Humans

Dr. David Price Williams will lecture on the archeology of Swaziland and how this has modified a number of accepted theories on the development of early humans.

Page 2

Star Gods Preview

Members will have an opportunity to preview the exhibition *Star Gods of the Ancient Americas* on two evenings this month.

Page 4

Dolphins and Porpoises

Wednesday, November 17, 7:30 p.m. Auditorium. Free

Why do schools of dolphins strand themselves on beaches? Why do they ride the bow waves of moving boats? Can they really "talk" to humans, guide ships out of danger, and perform other noble deeds?

Richard Ellis, author of the highly praised *The Book of Whales* and *The Book of Sharks* will give a lecture on the subject of his new book, *Dolphins and Porpoises*. The lecture, like the book, will cover the forty-three species of dolphins and porpoises including the bottlenose dolphin and killer whale, and various rare and exotic species such as the Ganges River dolphin (one of five freshwater

species), the pygmy killer whale, and the spinner and spotter dolphins which have been threatened by the tuna fishing industry in the Pacific Ocean.

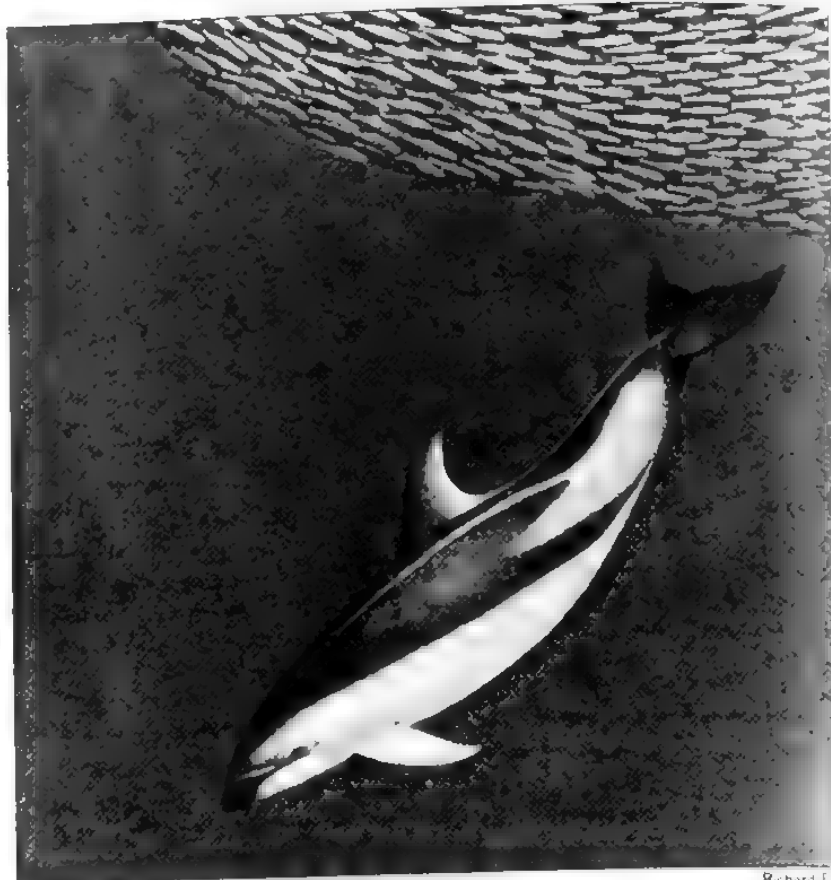
Using slides of all forty-three species, he will discuss their natural history, acoustic capabilities, involvement with humans, and conservation problems.

Richard Ellis is currently recognized as one of the foremost painters of marine natural history subjects in the United States. Among other things, his paintings of whales have been successfully employed in campaigns to name four whales as state mammals: the sperm whale in Connec-

ticut, the gray whale in California, the humpback in Hawaii, and the right whale in Massachusetts.

The lecture, sponsored by the Department of Education, will be free to all Museum visitors. Seating will be on a first-come first-served basis so Members are advised to arrive early to avoid disappointment.

The dusky dolphin is one of forty-three species of dolphins and porpoises. Richard Ellis will give a slide-illustrated lecture on these remarkable animals, their habits and their intelligence.



Richard Ellis

Early Humans in Africa

Wednesday, November 24, 7:00 p.m. Auditorium. Free

In the late 1930s, one of the finest sequences of Stone Age human remains ever uncovered was found by archaeologist Raymond Dart in what is now Swaziland. These bone fossils, dating back to the Middle Stone Age, are potentially the oldest known members of our own subspecies *Homo sapiens sapiens*. Unfortunately tons of bat guano wrecked the cave before any excavations could take place, and the bones could not be dated with certainty. The search soon began for another cave where the bones could be studied without such a formidable obstacle.

Five years ago, Dr. David Price Williams, commissioned by the King of Swaziland to examine the total prehistoric background of Swaziland, also began looking for such a cave. In the summer of 1981 he

found one in pristine condition in the Usutu Gorge in Swaziland. About the size of two olympic-sized swimming pools, the cave is the largest ever seen in the area. The local inhabitants call it "the place of the beer pots" after the pock marks in the roof caused by the erosion of frothy lava. Rich in deposits, there is evidence of Middle Stone Age manufacturing debris, and it is likely — as Dart's cave demonstrated — that fossils of human bones have been preserved.

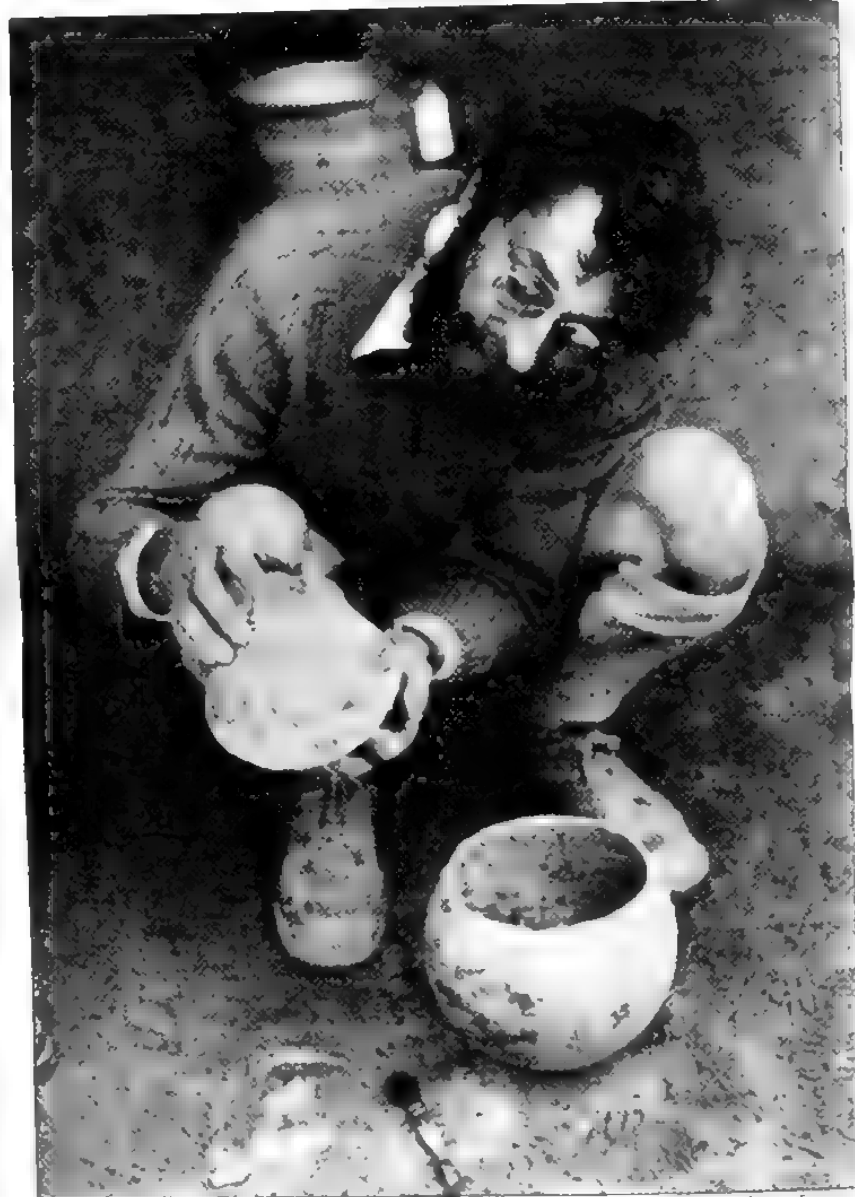
In a special lecture at the Museum entitled *Early Man in Africa*, Dr. Price Williams will discuss the archeology of Swaziland, and how fascinating new evidence has emerged to challenge long-held European views on the phases of human development. He will also show how recent theories in African pre-

history link seven phases of prehistoric evolution with major climatic oscillations.

Dr. Price Williams is Lecturer in Archeology at the University of London, and the Director of the Swaziland Research Association.

The lecture, sponsored by the Museum's Department of Education in cooperation with EARTHWATCH, will be free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are encouraged to arrive early to avoid disappointment.

Dr. David Price Williams has spent the past five years exploring the archeological pre-history of Swaziland. His lecture will present an overview of these studies.



Robert F. Jones

Caribbean Festival Month

Weekends in November. Leonhardt People Center

A month-long celebration at the Museum will focus on the music, dance and other arts of the Caribbean. Programs ranging from a live salsa demonstration to the retelling of stories from the Haitian oral tradition will bring the islands to the heart of Manhattan.

All of the programs will be on Saturdays and Sundays in November, from 1:00 to 4:30 p.m., and will be free to all Museum visitors.

While the month of November will focus on the Caribbean as a whole, each individual weekend will have a more specific focus. On November 6 and 7 there will

be programs of salsa music in the Leonhardt People Center, with a live demonstration of the music form by Johnny Colon's Orchestra (Kaufmann Theater, 1:00 and 3:00 p.m., free).

On November 13 and 14 the focus will be on Cuba and Cuban crafts and will include a performance on Afro-Cuban traditional music and dance by Grupo Kubata.

On November 20 and 21 demonstrations will take visitors to Puerto Rico with performances by the Ballet de Puerto Rico (junior company) and a demonstration of the traditional craft of building and

playing the "quatro," a Puerto Rican instrument similar to the guitar.

On November 27 and 28 visitors will journey to Haiti (Saturday) and the Dominican Republic (Sunday). Programs will include the influence of voodoo on the dances of the Caribbean, and dance performances by Troup Shango and Nicholas Cordero y la Co Fradre.

Films relating to the Caribbean will also be shown on most weekends. For a complete listing of all the programs scheduled for the Caribbean Festival Month, please check the calendar on page 8.

Archeologist in the Field Tuesday, November 30

This program is open only to Members of the Museum and their guests. Participating, Donor, and Contributing Members are entitled to three free tickets. Associates are entitled to one. Additional tickets may be purchased for \$4.00 each.

Please send me _____ tickets.

Name _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category _____

Please mail with a self-addressed stamped envelope to: Archeologist in the Field, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Members' Origami Workshop

Saturday, December 4, 10:30 a.m. to 4:30 p.m.
Basement Reception Area. Free and open only to Members

Members of all ages are invited to practice the ancient art of paperfolding at the fifth annual Members' Origami Workshop. Under the careful tutelage of Alice Gray, Michael Shall, museum volunteers, and volunteers from the Friends of the Origami Center of America (the same people who create the Museum's extraordinary Origami Holiday Tree each year), Members will magically transform squares of paper into parakeets, stars, blow-up bunny rabbits, foxes, and trick airplanes. There will be special sessions for youngsters ages four and five who will learn to fold graceful swans, sailboats, purses and candy canes.

The program is free and open only to Members of the Museum. We will supply all materials, you need only bring your nimble fingers. To register, please use the adjacent coupon. Early registration for the limited number of places is strongly advised.

Origami cat folded by Joan Appel
photograph by Richard Sheridan

Members' Origami Workshop Saturday, December 4
I would like to register for the time marked below. (Please indicate a first, second and third choice of times)

10 30 a m	11 30 a m	1 30 p m
2 30 p m	3 30 p m	

Number of People for Regular Workshop
Number of People for Young Children's Workshop (ages four and five)
(Children must be accompanied by an adult)

Name

Address

City

State

Zip

Daytime phone

Membership category

Please mail with a self-addressed, stamped envelope to
Origami Workshop, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Behind the Scenes Tours: Department of Vertebrate Paleontology

Sunday, November 14 and Wednesday Evening, November 17
\$6.00 and open only to Members

People often think of the Museum only in terms of its exhibitions and programs. But behind these there is a world of 34 million objects housed in storage areas, more than 250 scientists engaged in research, conservators preserv-

ing the collections for posterity, and artists preparing new exhibits for the future

This is a world that the public seldom sees, but a world into which Members are taken twice a year to meet Museum scientists, hear about their cur-

rent research, and see the extraordinary collections housed "behind-the-scenes."

This fall the Behind-the-Scenes Tour will lead Members through the Museum's famous Department of Vertebrate Paleontology. Scientists from the department will be on hand to discuss their research and to explain the important role that the Museum's collection plays in the international scientific community

There will be demonstrations of how fossils are removed from their matrix and prepared for exhibition and scientific study. The tour will also visit one of the seven floors that house the enormous collection compiled over the last century. The fossil specimens, representing virtually every continent, range from rabbits and rodents to million-year-old primate fossils

The tour will conclude with a walk through the spectacular halls of Early and Late Dinosaurs, and then with light refreshments in the Audubon Gallery

Tours last approximately an hour and a half. Reservations at \$6.00 per person can be made by completing the adjacent coupon. Early reservations for the limited places are strongly advised

Behind-the-Scenes Tours

Tours will leave at fifteen-minute intervals beginning at 10:30 a.m. on Sunday, November 14, and 5:15 p.m. on Wednesday, November 17. We will send you a confirmation card by mail which will indicate the exact time your tour will start

Name: _____

Address: _____

City: _____

Daytime

Member

Please

**Sold Out
from
October
Rotunda**

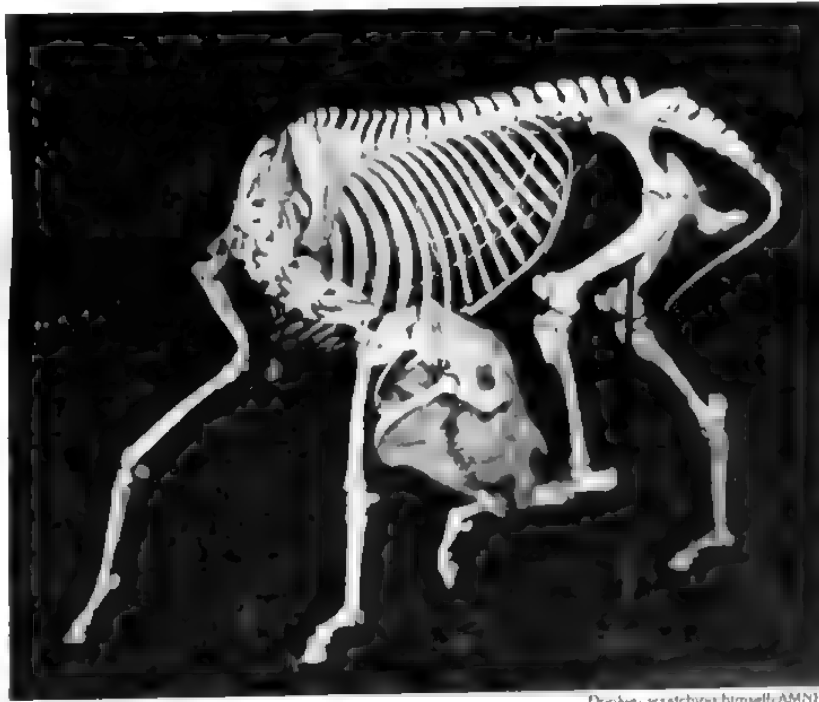
(More Behind-the-Scenes Tours
will be held this spring.)

(ble)
m.

p.m.
p.m.

Enclosed is my check for \$ _____ to reserve
places at \$6.00 each for the Behind-the-Scenes Tour

Please make check payable to the American Museum of Natural History and mail with a self-addressed stamped envelope to: *Behind-the-Scenes Tours*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024



Donkey, scratching himself (AMNH)

ROTUNDA

ISSN 0194-6110

Vol 6, No 9
November 1982

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Printed by Waldon Press, Inc., New York

Moana of the South Seas

Tuesday, November 9, 7:30 p.m. Auditorium. Free and open only to Members
Wednesday, November 10, SOLD OUT from October Rotunda

Monica Flaherty Frassetto, shown here when she was four years old (upper right), accompanied her father, Robert Flaherty, to Samoa for the filming of *Moana of the South Seas*. Ms. Flaherty Frassetto will introduce and discuss her new sound version of her father's masterpiece.

"The film *Moana of the South Seas*," wrote *New York Sun* critic John Gnerson in 1926, "is unquestionably a great one, a poetic record of Polynesian tribal life, its ease and beauty, and its salvation through a painful rite."

Moana of the South Seas was filmmaker Robert Flaherty's silent masterpiece. Monica Flaherty Frassetto, Robert Flaherty's daughter, was four years old at the time the film was made, yet she accompanied her parents to the islands for their endeavor. More than fifty years later, and with the help of the English-speaking chief Vaiaio Ala'ilima, she has undertaken the enormous project of assembling a sound track for the film. Using nine separately recorded tracks — some of Samoan chants, songs and dance music, some of the natural sounds of the islands, some of native voices carefully overdubbing what the original "actors" remember the dialogue

as being — she has created an extraordinary replica of what might have been the original sound.

Ms. Flaherty Frassetto will introduce and discuss this new sound version of her father's film at a special Members' screening in November.

The film, in portraying the island's everyday pursuits, captured both the inner spirit and the lifestyle of the Samoan people. It stars Moana, the son of a villager who worked for the Flaherty's during the filming, and Fa'angase, the daughter of a local chief. The project involved the entire town of Safune. The film contains authentic scenes of boar hunting, turtle fishing, the making of tapa cloth, and other daily activities.

The program on November 10, originally advertised in the *October Rotunda*, has been sold out. To order tickets for the additional evening, Tuesday, November 9, use the adjacent coupon.



Museum of Modern Art. Still Archive

Moana Tuesday, November 9

This program is open only to Members of the Museum and their guests. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased for \$4.00 each.

Please send me _____ tickets

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime phone _____

Membership category _____

Please mail with a self-addressed stamped envelope to: Moana, Membership Office, American Museum, Central Park West at 79th Street, New York, NY 10024



Tewa, the Hopi sun god, on a cotton shirt. Photo courtesy of the Museum of the American Indian.

Participating, Donor and Contributing Members are cordially invited to a Special Members' Preview of

Star Gods of the Ancient Americas

Monday, November 29, 5:30 to 8:30 p.m.
Tuesday, November 30, 4:00 to 7:00 p.m.

Throughout the western hemisphere, the original Americans built large, complex structures for astronomical observation, structured their lives and religions according to the heavens, and used astronomical imagery in their art. *Star Gods of the Ancient Americas* is the first major exhibition ever to present this astronomical imagery and to compare the astronomical beliefs and practices cross-culturally. Images of the sun, moon, planets and stars are reflected in the 140 artifacts, collected from Tierra del Fuego to the Arctic.

Highlights of the exhibition include a gold Peruvian calendar dated about A.D. 900, an elegantly carved Maya vase depicting the sun god with celestial serpents, and a group of seven-foot-high Tlingit "moonposts" from the Pacific Northwest.

The exhibition, organized by the Museum of the American Indian, will be free to all Museum visitors. For the Members' Preview, **your membership card is your ticket of admission** for you and your guests. Please use the lower level Central Park West or the Parking Lot entrances.

It's a Wise Bird That Knows a Good Deal

Members naturally select the American Museum of Natural History for their holiday shopping. Because of their special relationship with the Museum, they enjoy these special discounts:

10 to 40% Discount on These Special Books

The editors of *Natural History* magazine looked at hundreds of books to select these eight magnificent publications as holiday suggestions. All are recent publications in the field of natural history, and all have been approved by Museum scientists and editors. Fascinating in their content, these books are clearly written and magnificently illustrated.

As a special offer to Members of the Museum, any or all of these books are available at 10 to 40% off the publishers' list prices. In addition, a handsome gift card will accompany each book.

Galapagos: Islands Lost in Time
Tui de Roy Moore. ~~\$38.00~~ \$27.00

Life on Earth
David Attenborough. ~~\$22.50~~ \$19.00

To the Ends of the Earth
John Perkins with the American Museum.
~~\$27.50~~ \$23.00

Year of the Greylag Goose
Konrad Lorenz. ~~\$29.00~~ \$13.00

Man as Art
Malcolm Kirk, Andrew Strathern.
~~\$45.00~~ \$40.00

Spirals from the Sea: An Anthropological Look at Shells
Jane Safer, Frances Gill. ~~\$35.00~~ \$28.00

The Life of the Harp Seal
Fred Bruemmer. ~~\$25.00~~ \$15.00

Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight
Sylvia Czerkas, Donald Glut.
~~\$25.00~~ \$22.00

For a brochure with more information, write: *Members' Book Program*, Room 137, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. Or call (212) 873-1498. When ordering include shipping charge of \$2.50 for the first book, \$1.00 for each additional book. No shipping charge for five or more books



20% Discount on Gift Membership

You know what riches the Museum has to offer the magnificent exhibitions and extraordinary collections, *Natural History* magazine and the fascinating programs. So why not share this wealth by opening our doors to your friends and family this holiday season. As a special holiday benefit, **Members may give gift Memberships at 20% off the regular price.** We will enroll them immediately as Members and send you a special announcement card to give to them. And just look at what you will be giving them:

Associate Membership (\$15, but \$12 for you!)

- *Natural History* magazine for a full year
- Free admission to the Museum
- A free ticket to the *Naturemax Theater*
- Discount at all Museum Shops

Participating Membership (\$30, but \$24 for you!)

- All of the above
- *Rotunda*, the Museum's newsletter
- Six free tickets to the *Naturemax Theater*
- Free admission to the Museum for family and guests
- Discounts on all Planetarium admissions
- Special viewings of exhibitions
- Programs and lectures each month (just look at the opportunities in this issue)
- And much, much more

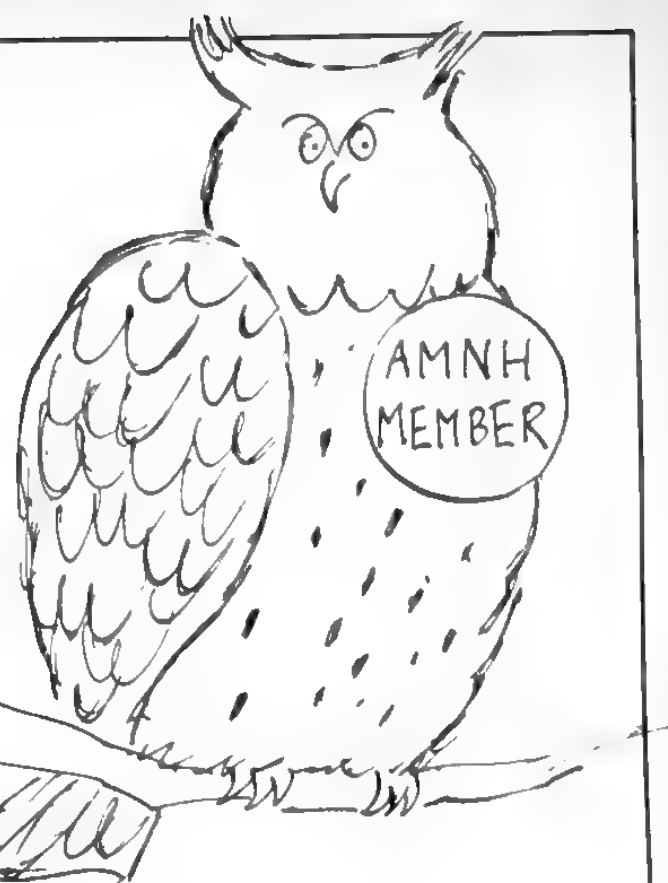
Yes! Memberships are a natural selection for my holiday shopping! (If you have more than one, enclose their names and addresses on a separate sheet of paper.) Mail to the Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

I enclose a check to the American Museum of Natural History for \$ _____ for the enclosed Membership

Please bill me after the holidays
Please charge my _____ Mastercard VISA
American Express
Card number: _____ Expires _____

Signature: _____
For immediate enrollment save time by calling our toll-free number

(800) 247-5470



10% Discount at Museum Shops

Unique gift items from around the world make the Museum Shop the natural selection for your holiday shopping. Not only do Members receive a 10% discount on all items they purchase, but you can probably find a special gift for anyone you know. Here is a list of just some of the items:

- Native American jewelry from rings to concha belts
- African kente cloths (the "cloth of kings")
- Glittering chunks of amethysts, calcites and other minerals
- Tyrannosaurs, Brontosaurus and other dinosaur ties
- Mexican wool rugs woven in earth tones and blues
- A sky-sized collection of bird books (the largest in NYC)
- Note cards by the hundreds with paintings and prints of your favorite natural history subjects

So come in and explore. There are items for both adults and children, with new creative ideas for your tired shopping list.



Drawings by, Dina Califa

Please enroll the following as
Associate Membership (\$12 at the Members' discount)
Participating Membership (\$24 at the Members' discount)

Name _____

Address _____

City: _____ State: _____ Zip: _____

HRP1

This Membership is a gift from

Name _____

Address _____

City: _____ State: _____ Zip: _____

Members' Tour of the Month Endangered Species

Beginning In December, the Membership Office will once again offer special Membership tours focusing on specific exhibition halls, collections, and natural history themes. All tours will be led by volunteers from the Museum's Highlights Tour program.

Endangered species will be the theme for the December tour. The tour will visit the Halls of African and Asian Mammals, Ocean Life, Am-

phibians and Reptiles, and Oceanic Birds to learn about the habits and haunts of some of the world's most threatened animals and the reasons for their endangerment. The tour will include a look at the Asian elephant, the African rhinoceroses, the manatee, sea turtles and New Zealand's Kaka Po bird.

The tours are open only to Members of the Museum. To register, use this coupon.

Members' Tour: Endangered Species

Please indicate a first, second and third choice of times (if possible)

_____ Friday, December 3 at 6:30 p.m.
_____ Saturday, December 4 at 10:30 a.m.
_____ Sunday, December 5 at 10:30 a.m.
_____ Wednesday, December 8 at 6:30 p.m.
_____ Saturday, December 11 at 10:30 a.m.
_____ Sunday, December 12 at 10:30 a.m.

Number of People _____

Name: _____

Address: _____

City: _____ State _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: *Endangered Species*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes November 21.

African-American Lecture Series

Wednesdays, November 3, 10, 17. 7:00 p.m.
Leonhardt People Center. Free

On three consecutive Wednesdays in November, the Museum will present an African-American Lecture Series. The lectures will focus on areas of cultural contribution made by African-Americans in the United States.

All the lectures, presented by the African-American program of the Department of Education, are free to all Museum visitors. The limited seating will be on a first-come first-served basis, so Members are encouraged to arrive early to avoid disappointment.

Wednesday, November 3

Black Religious Sounds in America: Origins of Gospel Music. Mr. L.D. Frazier will lead a musical celebration from the early spiritual born out of slavery to the influence of gospel music on current musical trends.

Wednesday, November 10

Historical Development of Jazz. Beginning with the New Orleans jazz style, the Leonard Goines Quintet and special guest Thelma Roper will trace the historical development of jazz. Demonstrations will include the New Orleans and

Chicago styles, big band and swing, bebop, cool jazz, hard bop, the avant-garde and present day fusion styles.

Wednesday, November 17

The Akan Tradition. The rich and colorful heritage of the Akan kingdom of West Africa will be discussed with emphasis on the religion, history and culture. The lecturer Amadoma Bediako, an Akan priestess at the Bosum-Dzemawodzi temple in Queens, NY, shows the significance of the tradition of the Akan people in their contemporary American setting.

Songs of Nature

Saturday, November 20, 11:00 a.m. 1:30 and 3:30 p.m.
Kaufmann Theater. Free to Members, \$2.50 for non-members

Plants, animals, and the changing seasons have provided inspiration for the works of poets and musicians for centuries. The Orpheus Chamber Singers will perform a delightful sampling of such works when they present *Hey Ho to the Greenwood: Sing a Song of Nature* at this month's Family Members' program.

The program will include songs by Franz Schubert and Wolfgang Mozart and verse by Gertrude Stein and Ogden Nash. There will be a spiritual about Noah's Ark, a witty piece describing the confrontation between an elephant and a grasshopper, and a 700 year old English canon, *Sumer is icumen in*. The audience will be asked to imitate the sounds

of animals before the 16th century Italian song *La Gallina* (The Hen) and join in the singing of the German round *Lachend, Lachend* (Laughing, Laughing). The recorder, percussion instruments, and a dance or two will accompany the song and verse.

The program is recommended for all ages. For tickets call (212) 873-1327.

Archeoastronomy of the Americas

Wednesday, December 1, 8, 15. Auditorium. 7:00 p.m.
\$16.20 for Members, \$18.00 for non-members

Archeology and astronomy each evoke an air of mystery and excitement. The emerging discipline of archeoastronomy draws on these two fields for an understanding of the astronomical beliefs and practices of Native Americans.

In conjunction with the special exhibition "Star Gods of the Ancient Americas" from the Museum of the American Indian, opening on December 3, three distinguished scholars will present slide-illustrated lectures and discuss how astronomy is and was woven into the myth, religion, and astrology of the native peoples of the Americas.

Dec. 1 *South American Archeoastronomy: Inca Astronomy and Nazca Ground Drawings* Professor Anthony F. Aveni, Department of Physics and Astronomy, Colgate University, and author of *Skywatchers of Ancient Mexico*

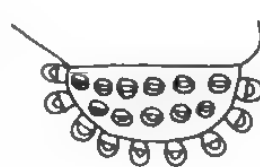
Since their discovery in the 1930's, the immense, enigmatic ground drawings near

Nazca, Peru, have puzzled scientists. Professor Aveni presents some new and interesting theories about their purpose and compares them to the sacred lines that radiate from the center of the Inca capitol of Cuzco.

Dec. 8 *Astrology and Destiny Among the Aztec and Maya.* Dr. Susan Milbrath, Guest Curator, "Star Gods of the Ancient Americas," and art historian specializing in astronomical imagery

The Aztec and Maya of Mesoamerica blended astronomy, astrology, and myth into a unique world view. Cosmic catastrophe was actually built into their calendar. Dr. Milbrath discusses the way that the Aztec and Maya expressed cosmology, astronomy, and fatalistic world views in art, myth, and religion.

Dec. 15 *Native American Portraits of the Sky.* Von Del Chamberlain, Astronomer, National Air and Space Museum, Smithsonian Institute, and



author of *When Stars Came Down to Earth. Cosmology of the Skidi Pawnee Indians of North America*

Mr. Chamberlain summarizes sky phenomena that Native Americans wove into the fabric of their lives. He will also discuss his current research on Winter Count records kept by the Sioux.

Navajo star and constellation depictions, and sky theology of the Skidi Band of the Pawnee

If available, single evening lecture tickets may

be purchased for \$7.50 outside the Main Auditorium on the evenings of these three lectures.

To register please use the adjacent coupon.

Archeoastronomy of the Americas

Yes, I would like to take this course for the three Wednesday evenings in December.

Number of tickets _____ X \$18.00 (\$16.20 for Members*)
Total amount enclosed _____

Name: _____

Address: _____

City: _____ State _____ Zip: _____

Daytime phone: _____

Membership category: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Registrar, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

*Note that only Participating, Donor and Contributing Members may take this discount

Native American Video Festival

Saturday and Sunday, November 20 and 21,
10:15 a.m. to 5:00 p.m.
Linder Theater. Free

Beavertail Snowshoes, a videotape recording the creation of the traditional Cree Indian style of snowshoe, is one of many videotape documentaries on and by Native Americans presented in a two day festival

A weekend of videotape documentaries on Native Americans and their ways of life will be shown at the American Museum of Natural History as part of the Museum of the American Indian's *Native American Film and Video Festival*. Because of the relative inexpensiveness of video and its flexibility as a medium, it has been taken up in many areas of documentary filming, including ethnography. The video presentations, offering a wide range of topics concerning Native American traditional and contemporary lifestyles, will be presented in four sessions: one each during the morning and afternoon of Saturday and Sunday. Sponsored in part by a grant from the New York State Council on the Arts, the programs will be free to all Museum visitors. Seating will be on a first-come first-served basis.

For further information call the Museum of the American Indian at (212) 283-2420

Saturday, November 20
The Circle of Life (10:15 a.m. to 12:15 p.m.) explores several tribal lifestyles and tribal histories. One of the three videotapes is "Salmon on the Run," a documentary on California's salmon fishing crisis and its impact on the traditional fishing done by Yurok Indians

Contemporary Issues (1:15 to 5:00 p.m.) focusses on Native American rights to traditional lands, religious practices, as well as control over determining their future as peoples. The four videotapes include "They Never Asked Our Fathers," a study which traces the forced changes in the lifestyle and economy of a Yup'ik Eskimo village in Alaska.

Sunday, November 21
Legacy for the Future. Traditional Art and Custom (10:15 a.m. to 12:45 p.m.) reflects the concern within Native American communities with documenting historical and artistic traditions, both as a legacy for the young and as a means of education for the general public. The five videotapes include "Beavertail Snowshoes," which shows how several Cree men and women each contribute different skills to create an intricate style of snowshoe

Spiritual Expressions (1:45 to 5:00 p.m.) explores respect for the land, communally observed rituals and the role of harmony in religious practice. The six videotapes include "The Green Corn Festival" as this ancient ceremony recently took place at a traditional Creek dance ground in Oklahoma.



Trust for Native American Cultures and Crafts

Museum Notes

Special Exhibitions

Natural History Photo Competition Through December 15, in the Akeley Gallery. A collection of prize-winning photographs in several areas of natural history

1982 Origami Holiday Tree. November 22 through January 6, Roosevelt Rotunda, second floor. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jelly fish and much, much more. A delight for both children and adults

Naturemax Theater Featuring the films *To Fly*, *Hail Columbia!* and *Living Planet*, this extraordinary film experience combines a screen that is four stories tall and more than sixty feet wide with a six-channel sound system. For information call (212) 496-0900

December at the Museum

Members' Origami Workshop Saturday, December 4, from 10:30 a.m. to 4:30 p.m. Reservations required. (See article page 3.)

Dinizulu and His African Dancers, Drummers and

Singers Sunday, December 12, 1:00 and 3:00 p.m. Kaufmann Theater

Bloomindale Chamber Orchestra Sunday, December 19, 3:00 p.m. Kaufmann Theater

Membership Benefits

Participating and Donor Members receive

- Free admission to the Museum for up to two adults and four children
- One year's subscription to *Natural History* magazine
- Six free tickets per year to the *Naturemax Theater*
- One year's subscription to the newsletter *Rotunda*
- 10% Discount at all the Museum Shops and on most courses at the Museum
- Behind-the-Scenes Tours, special receptions for new exhibitions, evening and weekend programs, and other special events
- 25% Discount on all Planetarium admissions
- Use of the Members' Reading Lounge
- Visiting privileges at the Museum's research station in Arizona, and other travel opportunities

For Membership information call (212) 873-1327

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour please ask at the information desks for specific tour times

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and natural historians. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Saturday, 10:30 a.m. to 12:30 p.m. and 1:30 to 4:30 p.m.

Planetarium Events
Wanderers in the Night

Through November 22. Learn the secrets of the planets, their legends and actual origins and what modern science has determined about their physical properties. Explore the fascinating history of each from swift Mercury to cold, dark Pluto

Star of Wonder
November 24 through January 4, 1983. What was the "Star of Wonder" that led the wise men on their journey to Bethlehem? Was it a comet? A bright meteor? Some have suggested that it was a nova or even a rare grouping of planets. This show is a celebration of the holiday season for the whole family.

Sky show times
Weekdays 1:30 and 3:30 p.m.
Saturday 11 a.m. hourly from 1:00 to 5:00 p.m. Sunday, hourly 1:00 to 5:00 p.m.

Admission for Participating Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices call 873-8828

Museum Information

Museum Hours Monday Tuesday, Thursday, Sunday

10:00 a.m. to 5:45 p.m. Wednesday, Friday and Saturday: 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday and Saturday evenings from 5:15 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays 3:30-7:00 p.m. Saturdays and Sundays noon-5:00 p.m.

Southwestern Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwestern Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, N.Y., N.Y. 10024, or call (212) 873-1300.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
November	1 Full Moon	2	3 7:00 p.m. Black Religious Sounds in America: Origins of Gospel Music. Leonhardt People Center Free. (See article page 6.)	4 2:00 p.m. The World of Siberia. Gallery talk with N. Johnson. Assemble at first floor Information Desk. Free. Taurid Meteor Shower	5	6 1:00 — 4:30 p.m. Caribbean Festival Month. Salsa. Latin Music in NYC. Caribbean Music and Dance — an Historical Perspective. Roots of Salsa Dance. Film: Percussions, Impressions and Reality. Leonhardt People Center. Free
1982						Leonhardt People Center. Free 1:00 and 3:00 p.m. Salsa Fiesta Demonstration and discussion of salsa music with Johnny Colon's Orchestra. Kaufmann Theater. Free

7 1:00 — 4:30 p.m. Caribbean Festival Month Salsa. Latin Music in NYC. Caribbean Music and Dance — an Historical Perspective. Roots of Salsa Dance. Film: Percussions, Impressions and Reality. Leonhardt People Center. Free 1:00 and 3:00 p.m. Salsa Fiesta Demonstration and discussion of salsa music with Johnny Colon's Orchestra. Kaufmann Theater Free	8 Last Quarter (half moon)	9 8:00 p.m. Linnaean Society. Kaufmann Theater Museum 7:30 p.m. Moana of the South Seas. Members' Evening Program. Auditionum. Reservations required. (See article page 4)	10 7:00 p.m. Historical Development of Jazz. Leonhardt People Center. Free. (See article page 6.) 7:30 p.m. Moana of the South Seas. Members' Evening Program. Auditionum. Reservations required. (See article page 4.) 7:30 p.m. N.Y. Mineralogical Club. Room 419. Free.	11 Veterans Day (Museum open)	12	13 1:00 — 4:30 p.m. Caribbean Festival Month. Tradition and Evolution in Cuban Crafts, Popular Culture and Religion in Cuba. Grupo Kubata — Afro-Cuban Traditional Music and Dance. Leonhardt People Center Free
---	-----------------------------------	---	---	--------------------------------------	-----------	---

14 1:00 — 4:30 p.m. Caribbean Festival Month. (See listing, November 13.) Leonhardt People Center Free 2:00 p.m. New York Shell Club Rm 426 Free Members' Behind-the-Scenes Tours of the Department of Vertebrate Paleontology Reservations required. (See article page 3.)	15 New Moon	16 8:00 p.m. N.Y. Entomological Society. Room 419 Free	17 Members Behind-the Scenes Tour of the Department of Vertebrate Paleontology Reservations required. (See page 3.) 7:00 p.m. The Akan Tradition. Leonhardt People Center Free. (See article page 6.) 7:30 p.m. Dolphins and Porpoises, with Richard Ellis. Auditionum Free. (See page 2.) Leonid Meteor Shower	18 2:00 p.m. Sharks Gallery talk with S. Buffum. Assemble at first floor Information Desk. Free	19	20 10:15 a.m. — 5:00 p.m. Native Americas on Video. Linder Theater Free. (See page 7) 11:00 a.m., 1:30 and 3:30 p.m. Songs of Nature. Reservations required. (See article page 6.) 1:00 — 4:30 p.m. Caribbean Festival Month The Traditional Puerto Rican "Quatro." Puerto Rican Typical Crafts. Ballet de Puerto Rico (Junior Company). Films on Puerto Rico. Leonhardt People Center Free
--	--------------------	---	---	--	-----------	--

21 10:15 a.m. — 5:00 p.m. Native Americas on Video Linder Theater Free (See page 7) 12:30 p.m. American Cetacean Society. Room 319. Free 1:00 — 4:30 p.m. Caribbean Festival Month (See listing, November 20.) Leonhardt People Center Free 2:00 p.m. N.Y. Turtle & Tortoise Society Room 129 Free 2:00 p.m. N.Y. Paleontological Society Room 426 Free	22 The 1982 Origami Holiday Tree is on display in the Roosevelt Rotunda. More Origami animals than ever before. Come see this annual holiday treat Last Day to see Wanderers in the Night. Hayden Planetarium. 8:00 p.m. Met Grotto, Nat'l Speleological Society Room 129 Free	23 8:00 p.m. Linnaean Society Linder Theater Free First Quarter (half moon)	24 Star of Wonder opens as the new Sky Show at the Hayden Planetarium 7:00 p.m. Early Man in Africa, with David Price Williams. Auditionum. Free. (See article page 2)	25 Thanksgiving Day (Museum closed)	26	27 1:00 — 4:30 p.m. Caribbean Festival Month. Influences of Voodoo on Dances of the Caribbean. Oral Literature and Folk Tales of Haiti. Haitian Folk Dolls. Troupe Shango (Haitian Dance). Film To Serve the Gods. Leonhardt People Center Free
--	---	---	---	--	-----------	--

28 1:00 — 4:30 p.m. Caribbean Festival Month Oral Tradition and Folklore in the Dominican Republic. Roots of Folk Tradition — Dominican Republic. Nicholas Cordero y la Cofradre (Dominican Dance and Music). Leonhardt People Center Free	29 5:30 to 8:30 p.m. Special Members' Preview of Star Gods of the Ancient Americas. (See article page 4)	30 7:30 p.m. Archeologist in the Field. Members' Evening program with Dr. David Hurst Thomas. Reservations required. Auditionum (See page 1) Full Moon 4:00 to 7:00 p.m. Special Members' Preview of Star Gods of the Ancient Americas. (See article page 4)	December 2	3 Star Gods of the Ancient Americas opens in Gallery 3 For Special Members' preview see article page 4	4 10:30 a.m. — 4:30 p.m. Members' Origami Workshop Reception Center (basement level) Reservations required (See article page 3)
---	---	--	-------------------	---	--



American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 6, No. 10 December 1982



Museum of the American Indian

Star Gods of the Ancient Americas

Opens Friday, December 3, Gallery 3

Throughout the western hemisphere, early Native Americans used large, complex structures for astronomical observations. They relied on a precise understanding of the sun, moon and star cycles to help determine their hunting and growing seasons, and they structured their day-to-day lives, their ceremonies and religious beliefs according to the heavens. In addition, their art and craft works were filled with astronomical imagery.

Star Gods of the Ancient Americas is the first major exhibition ever to present an overview of the astronomical imagery of the ancient Americans, comparing their beliefs and practices

cross-culturally. Organized by the Museum of the American Indian, it explores the sophisticated level of astronomy, astrology and cosmology reached by the earliest Americans from the Arctic to the tip of Tierra del Fuego. The exhibition focusses on their imagery and myths, on their calendars (those of the Maya and Aztec are considered as accurate as ours today), and on the breadth and scope of the astronomical relationships and cycles they apparently understood.

The 144 artifacts of gold, turquoise, wood, ceramic, stone and textiles vividly demonstrate this sophistication and its impact on the lives of early Na-

Mechanical sun mask of the Northwest Coast Indians (Kwakwaka'wakw) shown open revealing the spirit of the sun

tive Americans. Highlights of the exhibition include a gold Peruvian calendar dated about A.D. 900, an elegantly carved Mayan vase depicting the sun god with celestial serpents, a group of seven-foot-high Tlingit "moon posts" from the Pacific Northwest showing the phases the moon and a large scale mural of the Mayan observatory at Chichen Itza.

The exhibition is free to all Museum visitors.

The Year in Review

Rotunda takes you behind the scenes for a report on the fascinating operations "backstage" this past year at the American Museum of Natural History. **Pages 4-5**

Probing Deeper Waters

Sylvia Earle, world-renowned marine scientist and deep water diver, will present a slide and film-illustrated lecture on people's fascination with the ocean and the great technological advances we have made to explore it. **Page 2**

Traditional Music

Three separate programs will explore the music of traditional cultures. Tahuantinsuyo will present an evening of South American music; the Wesleyan Gamelan, an evening of gamelan music from Java; and Dinizulu will present two afternoon performances of African music and dance. **Pages 3 and 7**

A Rose Is a Rose Is a Sexual Object

While they do it differently, plants do reproduce sexually. Join us for John Cooke and the Oxford Scientific Film Company's extraordinary film on the process of pollination. **Page 6**

Exploring the Deep Frontier

Tuesday, January 18, 7:30 p.m. Auditorium
\$3.50 for Members, \$7.00 for non-members



Sylvia Earle

On January 18, the traveling exhibition, *Exploring the Deep Frontier*, will open in the Museum's Roosevelt Rotunda (second floor). The exhibition, consisting of underwater photographs, diving equipment, marine specimens, and audio/visual displays, describes people's fascination with the sea and the barriers they have overcome to explore it. To celebrate the opening of the exhibition, Dr. Sylvia Earle, the

world renowned marine scientist and deep-ocean diver, will present a special Members' program on oceanic exploration.

Dr. Earle's underwater experience includes 4,000 hours of observation, with 1,000 hours of living and working in under-sea laboratories. Using slides and film, Dr. Earle will take Members on a trip to the depths of the Ocean, an area that has been virtually as inac-

cessible and unexplored as the outer planets. She will survey the myriad plants and animals that inhabit the ocean depths, ranging from sea fans to luminescent fish. The program will include footage of scientists diving underneath the North Pole and of Dr. Earle's own record walk on the ocean floor at a depth of almost 1,250 ft.

In her lecture, Dr. Earle will focus upon the vast resource potential of the oceans, discussing the perils and prospects of mineral development and the possibilities of using aquaculture to enhance the world's food supplies. She will also look at how new technologies will enable people to live and work in the oceans. In the future, entire communities may be built underwater, and people may use small submarines as we use cars today.

Dr. Earle is curator and marine biologist for the California Academy of Sciences. She is also the co-founder of Deep Ocean Technology, Inc., a corporation which is developing new technologies to expand the ocean frontier.

To order tickets, please use the adjacent coupon. **There will be a private viewing of the exhibition prior to the lecture.**

The Deep Frontier, Tuesday, January 18

Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associate Members are entitled to one.

Number of Members' Tickets	X \$3.50	\$
Number of Non-Members' Tickets	X \$7.00	\$
Total payment enclosed:		\$

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *The Deep Frontier*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

The Subtle Art of Folded Paper

November 22 through January 6
Roosevelt Rotunda

This 1982 holiday season will mark the tenth anniversary of the Origami Holiday Tree. In commemoration, Alice Gray of the Department of Entomology, the Museum's resident origami expert, will once again bring together Museum volunteers and the Friends of the Origami Center of America to create yet another glorious tree, as well as a new anniversary design for the Omega Star Mobile. These twelve-pointed three-dimensional stars will be hung above the tree in a 16' by 20' spindle-shaped formation. At the center of this vast mobile will be a bright gold sun composed of more than 100 stars. The one element of the old mobile that will be retained is the silver comet, added in 1973 as a tribute to the comet Kohoutek.

Little is known about the origins of past time paper folding, but its roots lie in Asia. In China, paper models were burned as offerings to accompany the departed in afterlife. In Japan, the *Hina Matsui*, or "Girl's Day Ceremony," sometimes included folded paper representations of the royal court.

With the onset of extensive international travel, it was only a matter of time before this wonderful art found its way into Europe and the West. Japanese magicians taught their western counterparts to magically change a piece of

paper from figure to figure. It has since grown to such proportions that many commuters fold as they ride to work.

The practice of origami not only includes the artful shaping of figures and animals from a single sheet of paper, but has utilitarian uses as well. We seldom think of our grocery bags as origami, or that our Con Ed bill is mailed in origami. Many of its uses have become so commonplace that we no longer even notice them.

Alice Gray considers origami an "intellectual exercise because of the challenge to defeat the limitations of the medium." She includes with the tree a series of habitat groups to be arranged underneath. One, of Central Park in the winter, includes a mother with a baby carriage (one piece of paper), a man pedalling a bicycle (one piece of paper), joggers, a dog walker (three species of dog), and an old man on a bench feeding pigeons.

This year, a new habitat will be introduced: an English hedgerow, its leaves caught by the midseason change, complete with the British birds and varmints that make this habitat a home. There are hedgehogs, mice, a snake, and turtles.

So come stare and wonder at a thousand little miracles this holiday season, and join us in celebrating the tenth anniversary of the Origami Holiday Tree.

ROTUNDA

ISSN 0194-6110

Vol. 6, No. 10
December 1982

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1982 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Printed by Waldon Press, Inc., New York

Statement of ownership, management and circulation. Title of publication: *Rotunda* (ISSN 0194-6110). Date of filing: November 9, 1982. Frequency of issue: Monthly except bi-monthly May/June and July/August. Number of issues published annually: 10. Annual subscription price: \$3.00. Complete mailing address of known office of publication: Central Park West at 79th Street, New York, NY 10024. Complete mailing address of the headquarters or general business offices of the publisher: Same. Publisher: David Ryus, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Managing Editor: None. Owner: American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Known bondholders, mortgagees, and security holders: None. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes has not changed during the preceding 12 months. Total number of copies (A) 35,000 (B) 36,000. Paid circulation through sales through carriers, street vendors and counter sales: (A) None (B) None. Mail subscription: (A) 19,230 (B) 19,230. Total paid circulation: (A) 19,230 (B) 19,230. Free distribution by mail carrier, messengers, samples complimentary and other free copies: (A) 15,500 (B) 16,470. Total distribution: (A) 34,730 (B) 35,700. Copies not distributed: (A) 300 (B) 300. Return from news agents: None. (A) 35,000 (B) 36,000. I certify that the statements made by me above are correct and complete. (Signed) Stanton Orser, Editor

Tahuantinsuyo: Music of the Andes

Wednesday, January 26, 7:30 p.m. Auditorium
\$6.00 for Members, \$8.00 for non-members



Photos courtesy of Tahuantinsuyo

Tahuantinsuyo, a Queche word, was the name given by the Incas to their empire. Referring to the vast expanse of Andean civilization, it means "the four corners of the world."

Tahuantinsuyo is also the name adopted by a group of three talented musicians dedicated to researching and performing the traditional music of the Andes. Played on the instruments of the pre-hispanic cultures, their music represents the highlands of Bolivia, Peru, Ecuador, Colombia, Chile and Argentina. The rhythms, har-

monic structures and melodies are all part of a long musical tradition. Both haunting and beautiful, it is suggestive of the environment in which it developed: the thin air, the snow-capped mountains, the ever-present wind, the dark blue sky.

Most of the instruments are wind instruments. Some are ancient, such as the siku, the rondador and the antara (three different types of pan pipes), the kena (a resonant cane flute), and the bombo (a drum made from a hollowed tree trunk with animal skins

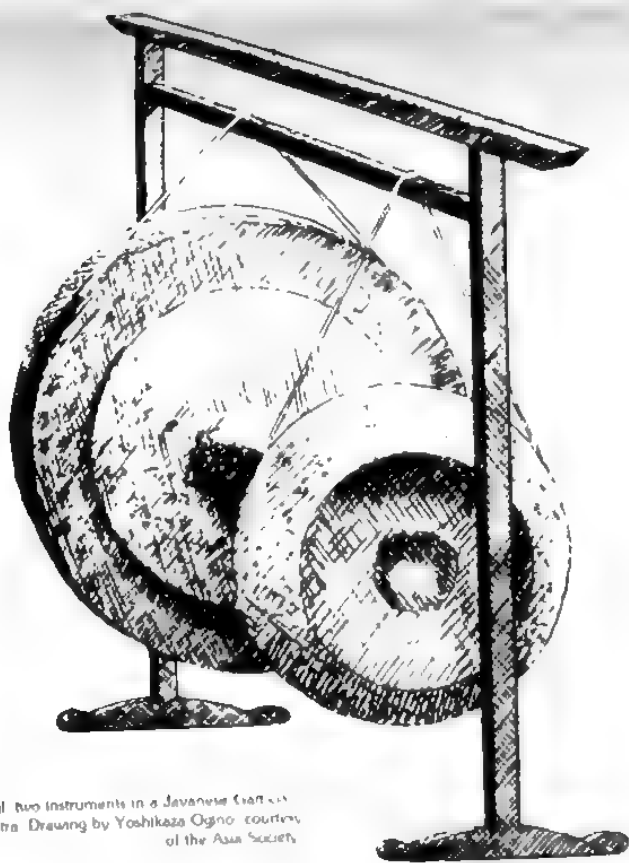
stretched across each end). Others are more recent, such as the charango, a string instrument made in the 18th century from an armadillo shell, that shows the influence of the Spanish guitar.

Tahuantinsuyo has performed many times in the New York area and at the American Museum of Natural History. Members may remember their music from the exhibition *The Gold of El Dorado*. Early reservations are strongly advised for the performance. To order tickets please use the coupon on this page. For more information call (212)873-1070.



Javanese Gamelan

Wednesday, February 2
7:30 p.m. Auditorium
\$8.00 for Members
\$10.00 for non-members



A Gong and Kempul, two instruments in a Javanese Gamelan or percussion orchestra. Drawing by Yoshikazu Ogino, courtesy of the Asia Society.

The classical music of Central Java is performed with a large ensemble of bronze xylophones, gongs, and other tuned percussion instruments, collectively known as a "gamelan." The many timbres and textures of the music, ranging from soft delicacy to driving power, are achieved by an orchestra of at least fifteen musicians each playing complementary melodies according to age-old compositions.

In a special one-time performance at the Museum, the Wesleyan Gamelan, under the direction of Mr. Sumarsam,

visiting artist in the World Music Program at Wesleyan University, will present a program of the classical music of Central Java.

The Wesleyan Gamelan is not only accomplished musically, but impressive visually as well. Filigreed gold carvings grace the red cases that support the gleaming bronze keys. Each instrument has its own ornamental motif, which is crafted to suit the instrument's shape and to visually unite it with the ensemble. In a similar manner, musical unity is achieved by each instrument

playing motifs and individual notes of a commonly felt vocal melody.

Mr. Sumarsam, born in East Java, has been playing gamelan music since he was eight years old. Trained as a musician, dancer and puppeteer at the Conservatory of Gamelan and the Academy of Gamelan, Surakarta, he has participated in a variety of international educational activities for many years. To order tickets for this performance, please use the coupon on this page. For more information call (212)873-1070.

The Mound Builders

Saturday, January 15
1:00 to 4:30 p.m. Kaufmann Theater
\$10.00 for Members, \$12.00 for non-members



The Great Serpent Mound in Adams County, Ohio

This symposium discusses the archeology of two complex societies that flourished and disappeared in the Eastern United States, leaving behind enigmatic earthworks and exotic art scattered from the Great Lakes to the Gulf of Mexico.

1:00 p.m. Introduction: Dr. David H. Thomas. Chairman of the Department of Anthropology, American Museum of Natural History, will provide a brief overview of two dramatic cultures—the Hopewellian and the Mississippian—that preceded the European colonization of America.

Moderator: Dr. Stuart Struiver. Director of the Center for American archeology and Professor of North American archeology at Northwestern University, will outline the history of mound investigations and discuss his excavation of Hopewell mounds of the Illinois Valley.

Dr. James B. Griffin, Curator Emeritus of North American archeology at the University of Michigan's Museum of Anthropology, and Professor Emeritus of Anthropology at the University is the trailblazer of Mound Builder archeology. His prodigious career spearheaded research on mound building societies. He will focus on the

cultural dynamics of the earlier (Hopewellian) society.

Dr. Anne-Marie Cantwell, Associate Professor of North American archeology at Rutgers University, will discuss the Mound Builders as a high culture, with a summary of the Mississippian rise to civilization. Trade, art, cosmology and political behavior will be discussed.

Dr. Howard D. Winters, Professor of North American archeology at New York University, will address the subject of why it all came to an end. He will discuss research on the cultural demise of the Hopewellians and the decline of Mississippian cities and states.

3:30 p.m. A film, *The Myths and the Mound Builders* (Odyssey Series, 59 minutes, 1981), will be shown following the presentations. The film reconstructs the history of ideas associated with the mounds and their builders, from the mid 19th century explorations undertaken by curious citizens, to contemporary research.

To order tickets please use the coupon on this page. Note that there are a limited number of tickets, so Members are advised to order early. For more information call (212)873-1070.

Special Events Coupon (see articles for prices)

	Number of tickets	Price	Total
The Mound Builders	X	\$	= \$
Tahuantinsuyo	X	\$	= \$
Javanese Gamelan	X	\$	= \$
Total amount enclosed \$			(note that only Participating, Donor and Contributing Members may take the Members' discount)

Name _____

Address _____

City _____

State: _____

Zip _____

Daytime phone _____

Membership category _____

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Registrar, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

The Year in Review



The American Museum of Natural History fills many roles: not only is it the largest, most extensive natural history museum in the world, but it is a hive of research and of education, as well. The following statistics and highlights vividly portray our service to our many constituencies. These services go far beyond the presentation of permanent and special exhibitions each year. As a natural resource for scientists, teachers, students — as a forum for important subjects in natural history — as fertile ground for the development of an understanding of the life sciences — it is one of the greatest institutions in the world.

- 2,441,575 people visited the American Museum of Natural History during the 1981-82 fiscal year. Approximately 133,000 of these were in school groups visiting for lectures and tours by the Department of Education, and 462,031 were visitors to the Planetarium.
- Hours during which the Museum remains open were expanded this year by 25%. A generous grant from Mobil allows the Museum to remain open free of charge on Friday and Saturday evenings (5:00 to 9:00 p.m.). In addition, the Museum has extended its weekday hours until 6:00 p.m., and Wednesday evening until 9:00 p.m., giving it the longest visitor hours of any major museum in New York City.
- More than 250 scientists, both curators and associates, affiliated themselves directly with Museum research, pursuing thousands of projects that cover the wide spectrum of investigation in the natural sciences. The work this year culminated with 261 articles and reviews and nine books being published about aspects of Museum research.
- Almost 1000 loans consisting of many thousands of specimens and artifacts from the Museum's unparalleled collections were made to scientists and institutions around the world this year. Many loans were made on a long-term basis, and others were

part of a world-wide collaboration of loans and exchanges to increase the data pool for scientific research.

- More than 1000 visits were made to the scientific departments by professionals wishing to study in depth various aspects of the collections. Many of these visits were extended by days, weeks, and even months, to allow for thorough investigation.
- 3770 requests for materials were received by the Museum's library, one of the largest natural history libraries in the world.
- Hundreds of graduate students, many through official programs, many on an individual basis, utilized the collections and the Museum to pursue advanced degrees and answers to questions in the life sciences. Many received advice, guidance and encouragement from members of the scientific staff, and many received remuneration through grants, fellowships and awards provided by the Museum or sought with the Museum's assistance.

Current Research

Thousands of projects and proposals are undertaken by the more than 250 scientists on the Museum staff. Their research takes them to every continent of the world, from the heights of mountain-top Native American villages and the deserts of Mongolia to the beaches of the Caribbean and the depths of the Red

Sea. Listed here is a sampling of the research that has been conducted this past year.

- Dr. David Hurst Thomas (Department of Anthropology) led two months of excavation and fieldwork on St. Catherines Island, Georgia. Ruins were excavated of the 16th and 17th century Spanish mission site, Santa Catalina de Guale, one of the best preserved mission sites in North America but which had been lost for more than 300 years. Thomas originally found the mission using highly complex technology including a proton magnetometer. To date two structures (including the church) and the mission well have been worked on.
- Dr. Linda Mantel (Department of Invertebrates) continued her investigation of the effects of low doses of common pollutants on the blue crab. These substances, she has determined, decrease the growth rate, slow regeneration, and affect the salt and water balance in this commercially important crab.
- Dr. Lester Short and Dr. Jennifer Home (Department of Ornithology) continued the exciting project of monitoring the behavior of the endangered Red-cockaded woodpecker. For the study twelve individuals of this endangered species were moved to St. Catherines Island in the hope that they might become permanently established. One pair of the birds successfully raised a single young bird late last year.
- Dr. Stanley A. Freed and Dr. Ruth S. Freed (Department of Anthropology) returned to the village of Shanti Nagar in northern India, where they had worked more than twenty years before. Both the earlier and later research focussed on the problems brought about by urban influences on traditional village life. Some areas of village life had undergone substantial change; other aspects were much



as they had been when they left. An analysis of the information gathered will focus on the changes and their causes

Dr. Eugene Gaffney (Department of Vertebrate Paleontology) supervised the construction of a complete skeleton of the extinct horned turtle, *Meiolania*. The skeleton, for which no complete model existed, took nearly two years of work and extensive research to finish. Four casts were then made from the skeleton. One was sent to the Museum of Lord Howe Island, Australia (the source of the turtle fossils), one went into the department's collection, and one was sent to the Australian Museum in Sydney, whose collections were invaluable to the project. The fourth was put on temporary exhibit at the American Museum of Natural History.

Dr. Judith E. Winston (Department of Invertebrates) carried out the sixth and final census of her three-year series of experiments on the life histories of colonial bryozoans, marine animals that colonize the hidden parts of the coral reef. Working in Discovery Bay, Jamaica, she censused, photographed and dried collecting panels for shipment back to the Museum. Her current studies on Florida bryozoans have turned up one species which occurs on drifting plastic trash in the Caribbean and off the Florida coast.

More Than Just Stereotypes

Too often the stereotype of a scientist or curator is of someone never out of a labcoat whose mind's eye is reserved for matters esoteric rather than those of current importance. Not only are the Museum scientists at the cutting edge of their fields, but they often reach out to help the community in matters of related concern

Dr. Niles Eldredge (Department of Invertebrates) is one of the leading voices in the battle against "scientific creationism." Among his numerous articles and books this past year were *Creationism as Theater* (Science 82), *What Science Is, What It Certainly Is Not* (Baltimore Sun), and *The Monkey Business - A Scientist Looks at Creationism* (Pocket Books). In addition, his popular book, *The Myths of Human Evolution* (Columbia University Press), written with Dr. Ian Tattersall of the Museum's Department of Anthropology, was published this fall.

- Dr. Richard Zweifel (Department of Herpetology) participated in a deposition arranged by the American Civil Liberties Union for the "creationist science" trial that took place in Arkansas this past year and that determined that "creationism" is not a science

- Dr. C. Lavett Smith (Department of Ichthyology) is the chairman of the Hudson River Fisheries Advisory Committee — a legislated body reporting to the New York State Department of Environmental Conservation — which has participated in the Hudson River Reclamation Project and the environmental impact study of Westway, among other activities

- Dr. Ethel Tobach (Department of Mammalogy) gave numerous lectures outside her immediate field of study this past year, two of which were *Women Working for Science and Science Working for Women*, and the keynote address for the conference *Women, Science and Technology: "New Barriers and How to Remove Them."*

- Sidney Horenstein (Department of Invertebrates) leads natural history tours of the urban environment that point out a fascinating range of information from the geological forces that shaped the landscape to the fossils embedded in our building stones. In addition, he lectures for RESTORE, an educational organization addressing the problems of building restoration. He focusses on the problems of building stone disintegration — how to recognize the problems and how to repair them.

- Dr. Charles Cole (Department of Herpetology) gave expert testimony in a multi-million dollar lawsuit alleging that a live snake had dropped out of an egg from an ordinary hen's dozen. After examining the specimens involved, Dr. Cole determined that biological facts were not consistent with the allegations, and the suit was dismissed by the judge

- Dr. Richard Van Gelder (Department of Mammalogy) sits on the State of New Jersey Council on Non-game and Endangered Species; Dr. Sydney Anderson (Department of Mammalogy) is director of the American Society of Mammalogists and chairman of their committee on legislation and regulations; Drs. Lester Short, Wesley Lanyon, Dean Amedon and Stuart Keith (Department of Ornithology) all sit on the International Council for Bird Preservation. All of these organizations vigorously pursue the preservation of habitats and research for endangered species

The Museum as a Forum

The American Museum of Natural History publishes *Natural History* magazine monthly, offering scientists and naturalists the opportunity to share their thoughts and discoveries, and offering Members the opportunity to read them. In addition the Museum provides meeting space for many of the city's scientific societies (an average of nine per month; see the calendar page of each issue of *Rotunda*), and serves as a forum where issues of great significance in the fields of natural history can be aired

- The importance of the tropical rain forests to the ecological balance of the earth, and their current "endangered" status were the subjects of a public symposium in which four of the world's foremost environmentalists participated

- A special ten-day conference attended by vertebrate paleontologists from around the world marked the first time that paleontologists had met

to compare their data and fossil specimens of the three-toed *Hipparion* horse. The Museum, with the largest and most complete collection of *Hipparion* fossils in the world, was the natural selection for the conference site. A report of the proceedings will be published next year

- A symposium on *Humans and Apes: Pathways in the Search for Human Origins* brought together three of the world's leading primatologists. Jane Goodall, Dian Fossey and Birutė Galdikas discussed their work on the great apes and the relationship of their studies to an understanding of human evolution. Donald C. Johanson, paleo-anthropologist and discoverer of the famous "Lucy" skeleton, was the moderator

- On two occasions, Stephen Jay Gould filled the Museum Auditorium for a lecture on *The Fact of Evolution - The Politics of Creation*. The importance of this very sensitive issue was recently underlined by a national poll stating that 44% of Americans believed the creationist view was scientifically accurate

- Last fall, Walter Cronkite conducted an interview in the Hall of Biology of Man with Donald C. Johanson, author of *Lucy: The Beginnings of Humankind*, and Richard Leakey, whose numerous dig sites and controversial stands have brought him to the forefront of the anthropological world. Two of the most well known paleo-anthropologists, they are also two of the least likely to agree, and this interview brought them into a rare public dialogue.

New and Improved Spaces

In a healthy sign of growth even in these times fraught with budget cutbacks and recession, the Museum has continued to expand both its space and offerings to the public

- In February the new NATUREMAX THEATER opened to the public, bringing the old principle of education-through-demonstration to new heights. Large format IMAX films are shown daily on a screen four stories tall and sixty-six feet wide

- Two new theaters, classrooms, lecture halls, and a renovation of existing space are under construction to become the new Charles A. Dana Education Wing. The two new theaters have already opened in what was formerly Education Hall, and other facilities will be in a new, two-story structure to be built in an interior courtyard of the Museum

- The Margaret Mead Hall of Pacific Peoples is nearing completion. (More information in future *Rotundas*)

- The future Hall of South American Peoples is swarming with construction workers and contractors, designers and anthropologists, all working to present a major permanent exhibition that will display the best of the Museum's archaeological and anthropological material from this geographical location

The Annual Report

We will be happy to send you a complete Annual Report for the American Museum of Natural History, free of charge. If you would like to have a copy, please write to the Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

Sexual Encounters of the Floral Kind

Sunday, January 23
11:00 a.m., 1:30 and 3:30 p.m.
Free and open only to Members
Kaufmann Theater



While they approach it differently than their neighbors in the animal kingdom, plants do reproduce sexually, exchanging chromosomes to produce fertile offspring. But nature has had to be pretty imaginative to allow this exchange to take place. While animals rely on mutual attraction and intimate contact, plants are rooted to the ground and don't pay social calls.

Nature, never at a loss for

solutions has provided them with a unique means of exchanging chromosomes: insects and other visitors travel unwittingly from one to the other, carrying pollen on their feet and wings.

In the hour-long film *Sexual Encounters of the Floral Kind*, John Cooke and the Oxford Scientific Films Company explore this fascinating area of nature. Using spectacular photography, some of it in time-

lapse, they have compiled a wealth of information that is entertaining and at times extraordinary.

"We travelled the world," Cooke says, "to get the most remarkable, most improbable stories of pollination. Some of the things that plants do to lure insects are absolutely unbelievable."

Some lilies put out flowers that, after a period of time that is sufficient for the local insects to have become coated with pollen, become traps that lure feeding insects in and don't let them out. Another species of lily, found in Sardinia, emits the odor of rotting flesh to attract blow flies.

John Cooke, who will introduce the film and answer questions, was an Associate Curator in the Museum's Department of Entomology from 1969 to 1973. Well known for his film on spiders, *Come into My Parlor*, he spent seven years with his colleagues making this latest film.

The program, presented here last year for the film's United States premiere, was so popular we have brought it back for a return engagement. It is highly recommended for all ages. To order tickets please use the adjacent coupon.

Sexual Encounters of the Floral Kind, Sunday, Jan 23
Participating, Donor, and Contributing Members are entitled to four free tickets. Associate Members are entitled to one. All other tickets are \$2.50. Please indicate a first and second choice of times if possible.

11 00 a m 1 30 p m 3 30 p m
Please send me tickets

Name: _____

Address _____

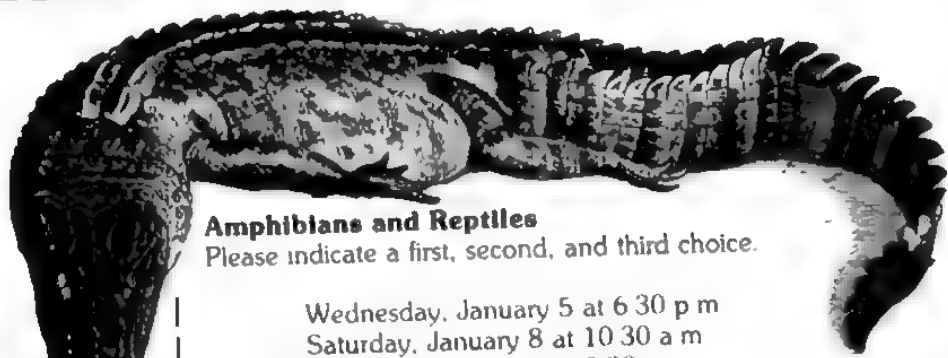
City _____ State _____ Zip _____

Daytime phone: _____

Membership category: _____

Mail with a self-addressed, stamped envelope to: *Sexual Encounters*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Members' Tour of the Month Amphibians and Reptiles



Amphibians and Reptiles

Please indicate a first, second, and third choice.

Why do bullfrogs wrestle? What is the difference between a crocodile and an alligator? How do lizards grow back their tails? Members will find out the answers to these and other questions on our Members' tour of the Hall of Amphibians and Reptiles. Members will be able to marvel at creatures whose ancestors lived almost 300 million years ago. The tour will include a look at Komodo dragons, a Galapagos tortoise, Gila monsters, leatherback turtles, pythons, and a toad that carries her eggs on her back.

The tour is open only to Participating, Donor, and Contributing Members of the Museum. To register please use the adjacent coupon.

Wednesday, January 5 at 6 30 p m
Saturday, January 8 at 10 30 a m
Sunday, January 9 at 10 30 a m
Wednesday, January 12 at 6 30 p m
Saturday, January 15 at 10 30 a m
Sunday, January 16 at 10 30 a m

Number of people: _____

Name: _____

Address _____

City: _____ State: _____ Zip: _____

Daytime phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Membership Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. No reservations will be accepted after December 21, 1982.

Still Nosing Around?

Give a Gift of Membership for the Holidays



As a special holiday benefit, Participating, Donor and Contributing Members may give gift Memberships at 20% off the regular price. We will enroll your friends, relatives or business associates as Members and send you a special announcement card to give to them. Or, if you have gotten too far behind in your shopping to get it to us in the mail, come into the Museum at any time and we will make sure you carry your gift out with you. Minimum hassle. Minimum wait. And just look at what you will be giving them:

Associate Membership (\$15, but \$12 for you!)

- *Natural History* magazine for a full year
- Free admission to the Museum
- A free ticket to the *Naturemax Theater*
- Discount at all Museum Shops

Participating Membership (\$30, but \$24 for you!)

- All of the above
- *Rotunda*, the Museum's newsletter
- Six free tickets to the *Naturemax Theater*
- Free admission to the Museum for family
- Discounts on all Planetarium admissions
- Special viewings of exhibitions
- Programs and lectures each month (just look at the opportunities in this issue)
- And much, much more

Yes! Memberships are a natural selection for my holiday shopping!

(If you have more than one, enclose their names and addresses on a separate sheet of paper.)

Please enroll the following as:
Associate Member (\$12 at Members' discount)
Participating Member (\$24 at Members' discount)

Name _____

Address _____

City: _____ State: _____ Zip: _____

This Membership is a gift from:

Name _____

Address _____

City: _____ State: _____ Zip: _____

I enclose a check to the American Museum of Natural History for \$ _____ for the enclosed Membership(s):

Please bill me after the holidays

Please charge my _____ Mastercard _____ VISA _____ American Express _____

Card number: _____ Expires: _____

Signature: _____

Mail to the Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

African Rhythms

Sunday December 12, 1:00 and 3:00 p.m. Kaufmann Theater. Free

Throughout his long career in African dance and culture, Nana Dinizulu has travelled to Africa many times. With research there and in the United States, he has been able to develop a repertoire of African music, songs and dances that reflects the attitudes and character of the peoples it represents. He will bring a sampling of this extensive repertoire to the Museum when the Dinizulu Dancers, Drummers and Singers perform their fourth dance concert here.

The Dinizulu Dancers, Drummers and Singers, under Nana Dinizulu's direction, have been a professional dance company since the late

1940s. They have performed throughout the United States and West Africa, on television and in theaters, presenting the traditional dances and music of various African cultures. They thrilled audiences for two years at the African Pavilion at the New York World's Fair, and, through their appearances at schools, thousands of American children of all cultural and ethnic backgrounds have received their first authentic introduction to African culture.

The dances they will perform at the Museum include the Ibutho (a Zulu war dance), the Egungun (a secret society dance from Nigeria), and the

Gumboot (the highly energetic dance of the South African miners).

The performances, sponsored by the Department of Education, will be free to all Museum visitors. **Free tickets for both performances will be distributed on a first-come first-served basis** near the first floor information Desk beginning at 11:30 a.m. on the day of the performance. Please note that no more than two tickets will be given to any one adult in line. The limited tickets for both performances are expected to go quickly, so Members are advised to arrive very early.

New Naturemax Film

Beginning Friday, November 26, the Museum's NATUREMAX THEATER will add the film *Man Belongs to the Earth* to its schedule. A fascinating exploration of the fragility of the earth's resources, this film was the standout sensation at Spokane's Expo 74. From the dazzling opening shots of the Grand Canyon to a dramatic oil-rig fire at the end, the huge images are a reminder to us all both of the earth's magnificent beauty and its extreme fragility which industrial soci-

ety so often ignores.

This twenty-three minute film will become part of the Friday and Saturday evening double features where it can be seen either with *Living Planet* or *To Fly*. The film *Living Planet* will move into the daily schedule alternating showtimes with *To Fly*. *Hail Columbia!* will not be shown after Wed., November 24.

If you have any questions as to showtimes and schedules, please call the NATUREMAX number at (212) 496-0900.

Museum Notes

STAR OF WONDER

For centuries men and women have puzzled over the enigma of the "star of wonder." We are told that a bright star lit up the night sky announcing the birth of the Christ child in Bethlehem and leading the three wise men to his cradle. Was this astronomical phenomenon merely a rare grouping of planets? A comet? A bright meteor? Some have suggested that it might even have been a supernova. Join us this holiday season for the Hayden Planetarium's annual presentation of *Star of Wonder*. (See Planetarium Events in the Museum Notes for Sky Show times.)

Membership Benefits

Participating and Donor Members receive:
Free admission to the Museum for up to two adults and four children.

One year's subscription to *Natural History* magazine.
Six free tickets per year to the Naturemax Theater.

One year's subscription to the newsletter *Rotunda*.
10% Discount at all the Museum Shops and on most courses at the Museum.

Behind-the-Scenes Tours, special receptions for new exhibitions, evening and weekend programs, and other special events.

25% Discount on all Planetarium admissions.
Use of the Members' Reading Lounge.

Visiting privileges at the Museum's research station in Arizona, and other travel opportunities.

For Membership information call (212) 873-1327.

Planetarium Events

Star of Wonder. Through January 4, 1983. What was the "Star of Wonder" that led the wise men on their journey to Bethlehem? Was it a comet? A bright meteor? Some have suggested that it was a supernova or even a

rare grouping of planets. This show is a celebration of the holiday season for the whole family.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.
Saturday: 11 a.m., and hourly from 1:00 to 5:00 p.m.
Admission for Participating Donor and Elected Members is \$2.25 for adults, \$1.25 for children. For Non-Member prices, and holiday show schedule call 873-8828.

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open 2:00 to 4:30 p.m., Tuesday through Friday, and 1:00 to 4:30 p.m. on Saturday and Sunday. It is closed on Mondays and holidays.

People Center. Ethnic programs featuring dance, music, films, lectures and workshops are presented on some weekends from 1:00 to 4:30 p.m. This month visitors can explore various aspects of Japanese culture. Programs will range from an in-depth look at the art of flower arranging (ikebana) to Shakuachi flute music and classical dance. For complete

listings of programs see the calendar page.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m.
Wednesday, Friday and Saturday: 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m.
Wednesday, Friday and Saturday evenings from 5:15 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwestern Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Coat Checking. For your convenience the coat check room is located in the basement next to the cafeteria, and on the second floor at the main entrance. There is a 40¢ charge per item.

Special Exhibitions

Stargods of the Ancient Americas. December 3 through March 27, 1983, in Gallery 3. The first major exhibition ever of ancient Americans' fascination with the heavens. A vivid display of works in gold, turquoise, wood, stone, textiles, and ceramics representing images of the sun, moon, stars and planets, for three thousand years. (See page 1.)

1982 Origami Holiday Tree. Through January 6, Roosevelt Rotunda, second floor. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jelly fish and much, much more. A delight for both children and adults.

Natural History Photo Competition. Through December 15, in the Akeley Gallery. A collection of prize-winning photographs in several areas of natural history.

Featuring the films *To Fly*, *Living Planet* and *Man Belongs to the Earth*, this extraordinary film experience combines a screen that is four stories tall and more than sixty feet wide with a six-channel sound system. For information call (212) 496-0900.

January at the Museum

Mound Builders Symposium. Saturday, January 15, 1:00 to 4:30 p.m. Reservations required. (See article page 3.)

Exploring the Deep Frontier with Sylvia Earle. Tuesday, January 18, 7:30 p.m. Reservations required. (See article page 2.)

Sexual Encounters of the Floral Kind. Sunday, January 23, 11:00 a.m., 1:30 and 3:30 p.m. Reservations required. (See article page 6.)

Tahuantinsuyo. Wednesday, January 26, 7:30 p.m. Reservations required. (See article page 3.)

Sun

Note: The Museum is open until 9:00 p.m. on all Wednesdays, Fridays and Saturdays. Thanks to a generous grant from Mobil, the Museum is open free of charge on Friday and Saturday evenings (5:00-9:00).

Mon

Call For Volunteers! The Museum needs volunteers for a variety of rewarding activities, both on weekdays and weekends. If you would like to volunteer, or if you would like more information, please call the Volunteer Office at (212) 873-1300, extension 538.

Tue

Wed

Thu

Fri

Sat

5 1:00 — 4:30 p.m. Japanese Classical Dance and Flower Arranging — the Art of Ikebana
Leonhardt People Center. Free

6

7 Last Quarter (half moon)

8 3:00 p.m. NY Microscopical Society. Room 419. Free.

9 2:00 p.m. The World of Mammals. Gallery Talk with R. Aylward. Assemble at first floor Information Desk. Free.

10

11 1:00 — 4:30 p.m. Japanese Classical Dance and Koto Tradition. Leonhardt People Center. Free
Chanukah

12 1:00 and 3:00 p.m. Dinizulu and His African Dancers. Drummers and Singers Kaufmann Theater. Free (See article page 7.)

13

14 12:30 p.m. Lirinean Society. Linder Theater. Free

Geminid Meteor Shower

1:00 — 4:30 p.m. Japanese Classical Dance and Koto Tradition. Leonhardt People Center. Free.
2:00 p.m. NY Shell Club. Room 426. Free

15 7:00 — 8:30 p.m. Native American Portraits of the Sky. Lecture with Von del Chamberlain. For information call (212) 873-7507. Tickets required. Auditorium.
New Moon

16 2:00 p.m. Native Americans of the Plains. Gallery Talk with J. Munoz. Assemble at first floor Information Desk. Free

17

18 1:00 — 4:30 p.m. East Meets West in Japanese Dance. Festivals of Japan. Shikuhachi Flute Music. Leonhardt People Center. Free

19 12:30 p.m. American Cetacean Society. Rm. 319. **1:00 — 4:30 p.m.** East Meets West in Japanese Dance. Festivals of Japan. Shikuhachi Flute Music. Leonhardt People Center. Free.

20

21 8:00 p.m. NY Entomological Society. Room 129. Free.

22 Usid Meteor Shower

23 2:00 p.m. Plants of Deciduous Forests. Gallery Talk with H. Schiller. Assemble at first floor Information Desk. Free.

24

25 Christmas Day (Museum closed)

2:00 p.m. NY Paleontological Society. Room 426. Free
2:00 p.m. NY Turtle & Tortoise Society. Room 129. Free
3:00 p.m. Bloomingdale Chamber Orchestra. Kaufmann Theater. Free

Winter Solstice
Winter begins 11:39 p.m. EST.

26

27

28 8:00 p.m. Met Grotto — Nat'l Speleological Society. Room 129. Free.

29

30 Full Moon
Total Lunar Eclipse (begins 4:50 a.m., ends 6:50 a.m. Sun rises 7:20 a.m.)

31



ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 7, No 1 January 1983

Chuck Stedman, Sea Films Inc. National Geographic Society



Dr. Sylvia Earle is a state-of-the-art pressure-tolerant diver who has explored the ocean floor.

The Mystery of the Deep

Exploring the Deep Frontier

Wander into the exhibit *Exploring the Deep Frontier* and you may find yourself slipping under the polar ice caps. Or eye-to-eye with some of the remarkable creatures that inhabit the ocean's depth.

Exploring the Deep Frontier (opens Tuesday, January 18, Roosevelt Rotunda) is a travelling exhibition examining the lure that the ocean has held over so many generations of people. Because of its formidable barriers, the ocean depths have been virtually as inaccessible and unexplored as the outer planets. The exhibit uses an array of film clips, photo murals, and life-size models to lead visitors through diving history, from primitive diving bells to the space-age diving suits and submersibles.

Presented by the California Academy of Sciences and the National Geographic Society, the exhibit will be free to all Museum visitors.

A Lecture with Sylvia Earle

Dr. Sylvia A. Earle, internationally renowned marine scientist and conservationist, has spent more than five months of her life underwater. She has logged 1000 hours in undersea laboratories and established the record for the deepest ocean-bottom walk by a woman — 1250 feet.

On Tuesday, January 18, at 7:30 p.m., Dr. Earle will describe her exciting diving experiences in a special Members' program. Her lecture will include slides and film footage of scientists diving under the North Pole and of her own record walk on the ocean floor. In addition she will discuss the vast resource potential of the oceans, and she will provide a look at how new technologies will enable people to live and work undersea.

Prior to the lecture there will be a private viewing of the exhibition *Exploring the Deep Frontier*. To order tickets use the coupon on page 2.

Deep Ocean Photography

Geologists studying land formations can generally get to their study sites. Marine geologists, however, are hindered by thousands of feet of water. Ideally they could journey down to the ocean floor on a regular basis, but the equipment is hard to come by and the expense prohibitive.

An alternative and much less expensive means of observation, uses an underwater camera lowered by cable and controlled from a surface ship.

Deep Ocean Photography (opens Friday, January 21, Akeley Gallery) shows the remarkable advances in deep water photography that have been made by the U.S. Navy. This group of photographs, taken by the Navy's Walter Jahn, are the result of a recent photo-exploration of the Gilliss Seamount, two volcanic peaks rising 10,000 feet from the 16,500 foot deep ocean floor in the Atlantic basin. The exhibit is free to all Museum visitors.

Weather or Not

What magic spells and crystal balls do modern meteorologists use to determine tomorrow's weather? What can you tell by just looking out your window or up into the sky? Join Dr. William Gutsch of the Hayden Planetarium in a discussion of this fascinating subject.

Page 3

Festivals, Insects and Apes

Expand your horizons with courses in anthropology, human evolution, a whale watch off Cape Cod, and much more. The listing for the Department of Education's Afternoon and Evening Lecture Series for this spring appears inside.

Pages 5-7

Galactic Health Adventure

Members are invited to preview Slim Goodbody's new show in the Sky Show Theater of the Hayden Planetarium.

Page 3

Man and Nature Lectures

Dr. David A. Hamburg will deliver three lectures on Critical Issues in Contemporary Human Adaptation as part of the new Mack Lipkin Man and Nature Lectures.

Page 4



A procession of camels winds its way across the desert in the IMAX film *Living Planet*. This magnificently photographed history of the evolution of life is now showing daily in the NATUREMAX THEATER. The film alternates showtimes with *To Fly!*, the history of American aviation. New to the theater is the film *Man Belongs to the Earth*, an ecologically-oriented film pointing out both the good and bad influences that mankind has on the world. For information call (212) 496-0900

Members' Memo Have You Got the Time?

There are many ways of giving to the American Museum of Natural History Membership is of course one way, and your membership dues are vital to our continued growth and development. Corporate giving is another, and if you turn to page 11 of this issue, you will find a list of the many different corporations who have so generously supported us during the past year. However, one of the most important and meaningful ways of giving to the Museum is as a Museum volunteer. Last year alone, almost 500 people contributed more than 100,000 hours of their time, energy, and skill to the Museum and its many departments.

Volunteers are crucial to the Museum. In Membership, volunteers have proven invaluable to us in registering people for programs, processing memberships, and serving as hosts and guides for many of our programs. Events such as the Behind-the-Scenes Tours and Origami workshops would be impossible without their help. In Anthropology, volunteers perform a wide variety

of tasks ranging from classifying pre-historic weapons to translating the journals of south American archeologists (The opportunities are so popular that there is a long waiting list.) If you were to visit our field station on Great Gull Island, you would find Ornithology volunteers camping under primitive conditions as they help with a continuing study of the island's tern population. In our basement, another group of volunteers is making reproductions of dinosaur skeletons to be sent to other Museums. I am sure many of you have seen our Origami holiday tree (and if you have not, you should try to see it before it is taken down on January 6) but did you realize that every origami figure on that tree was folded by a volunteer?

Volunteers also serve as a primary link with our public. All of our information desks are manned by volunteers. And all of the guides of our Highlights Tour program are volunteers who have undergone rigorous training and spent hours learning about the Museum's exhibits and

collections.

Our volunteers are a diverse group. They range in age from 14 to 90 and they come from all walks of life. There are teachers, doctors, news desk editors, insurance executives and of course students who come from the city's vast network of schools and colleges.

Volunteering at the Museum is an exciting way of becoming involved in the Museum and its many activities and of getting a behind the scenes view of how we operate. If you have some spare time and would like to help, please call the volunteer office at (212) 873-1300, ext. 538. The staff will explain the different opportunities available and set up an appointment to meet with you. Now is a particularly good time to sign up since orientation sessions begin in February.

Volunteering can be a magical experience. I should know because I started here as a high school volunteer almost twelve years ago.

Henry H. Schulson

ROTUNDA

ISSN 0194-6110

Vol. 7, No. 1
January 1983

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Kay Danzig — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Printed by Waldon Press, Inc., New York

The Deep Frontier, Tuesday, January 18

Participating, Donor, and Contributing Members are entitled to four tickets at the Members' price. Associate Members are entitled to one

Number of Members' Tickets	X \$3.50	\$
Number of Non-Members' Tickets	X \$7.00	\$
Total payment enclosed:		\$

Name _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____

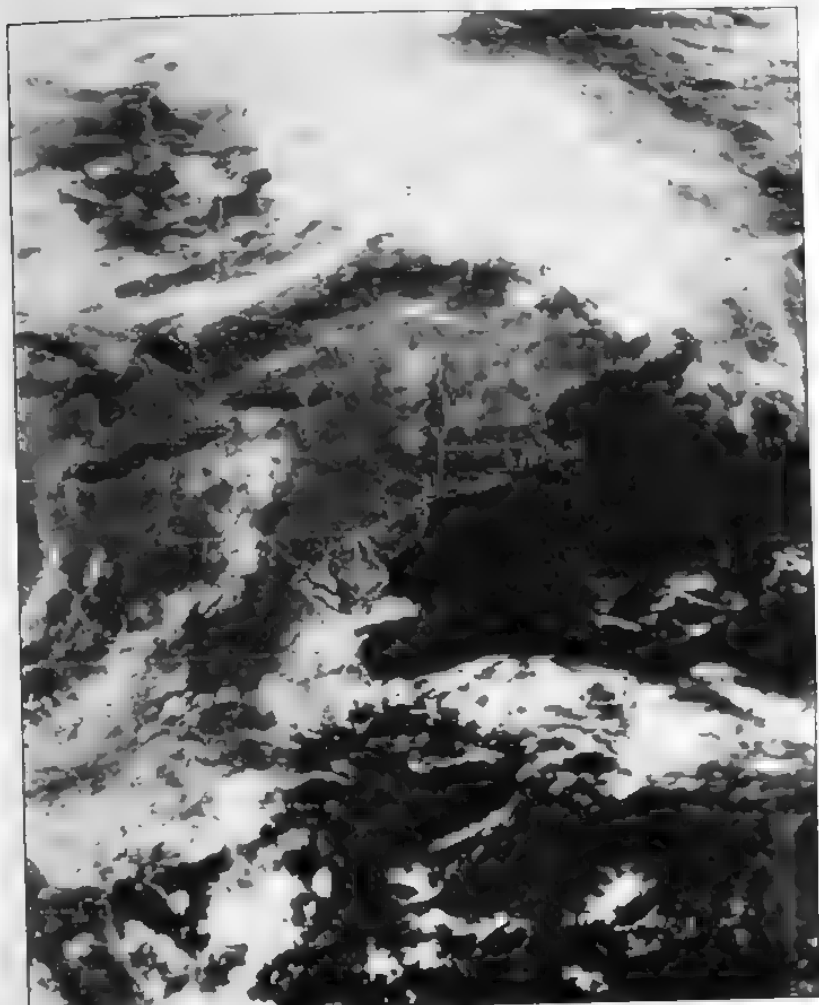
Membership category _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *The Deep Frontier*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024



Chris Newbert/National Geographic Society

Weather Wise
Wednesday, February 16, 7:30 p.m. Auditorium
Free and Open Only to Members



The East Coast as seen from a weather satellite

Each night millions of Americans flick on their television sets to view the next day's weather forecast. They are greeted by smiling weathercasters who, with a few charts and photographs, make the art of forecasting seem simple. In fact it is a highly complex science.

Members are invited to join Dr. William Gutsch for a behind the scenes look at how meteorologists create the daily weather forecast. Members will learn how 'round-the-clock ground observation as well as data from balloons, radar stations, and earth-orbiting satellites are used together with modern computers to produce the weather report seen on television each night. The program will be richly illustrated with slides, film, time lapse photography and color radar images.

In addition, Dr. Gutsch will take a close look at particular winter weather phenomena indigenous to the Northeastern United States. Using special satellite footage, he will

trace the birth and development of a winter storm.

Dr. Gutsch is Chairman and Associate Astronomer of the American Museum - Hayden Planetarium as well as science correspondent and meteorologist for WABC T.V. Before

coming to New York City, he served as Staff Astronomer at the Strasenburgh Planetarium in Rochester, New York and did forecasting for the ABC and NBC affiliates there. To order tickets please use the adjacent coupon.

Weather Wise, Wednesday, February 16

This program is open only to Members of the Museum and their guests. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased at \$4.00 each.

Please send me _____ tickets

Name _____

Address _____

City: _____ State: _____ Zip _____

Daytime Phone _____

Membership category _____

Please mail with a self-addressed stamped envelope to: *Weather Wise*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Galactic Health Adventure
Members' Preview: Saturday, February 12, 10:15 and 11:30 a.m.
Hayden Planetarium. \$3.00 for Adults, \$2.00 for Children

Blast off with Slim Goodbody in a special Members' premiere of his new galactic health adventure at the American Museum - Hayden Planetarium. Upon entering the sky theater, you will be enlisted in the National Air and Health Administration (NAHA) and become a member of Captain Goodbody's crew. As Central Park gradu-

ally recedes from your view, NAHA's carrot shaped rocket ship will lift you off the planet and up above the earth's atmosphere. Here the crew will join Captain Goodbody in specially designed galactic exercises and songs, and he will teach you about the planets and how to navigate by the stars. The mission will pass through meteor showers

and asteroid belts, and you should be prepared to encounter space pirates and fantastic alien creatures. The ship will also visit planets and their moons and discuss how well your body would survive in these alien worlds. Music and song will be piped into the ship throughout the mission.

Before joining NAHA, Cap-

tain Goodbody was a T.V. star on planet earth's Captain Kangaroo Show. He is the author of two books (*Mr. Slim Goodbody Presents the Inside Story* and *What Can Go Wrong and How to Be Strong*) as well as a record album designed to teach children about health concepts. He is now expanding his performance to include other

worlds. The show is recommended for children ages 4-12.

The show will appear from February 14 through April 2. For showtimes and non-member prices call (212) 873-1300, ext. 206. The special Members' previews will be the only shows for which you can reserve tickets with the adjacent coupon.

Slim Goodbody Saturday, February 12

Number of children's tickets _____ x \$2.00 \$
Number of adult's tickets _____ x \$3.00 \$
Total payment enclosed: \$

10:15 _____ 11:30 (please indicate a first and second choice if possible)

Name: _____

Address: _____

City: _____ State: _____ Zip _____

Daytime Phone: _____

Membership category: _____

Please make check payable to The American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *Slim Goodbody*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.



Javanese Gamelan

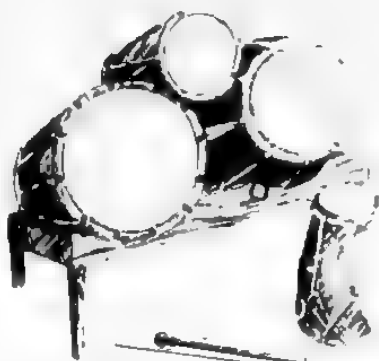
Wednesday, February 2, 7:30 p.m. Auditorium
\$8.00 for Members, \$10.00 for non-members

The classical music of Central Java is performed with a large ensemble of bronze xylophones, gongs, and other tuned percussion instruments, collectively known as a "gamelan." No two gamelan are precisely alike, the instruments being tuned only to each other, rather than to an external standard pitch. A gamelan typically consists of two sets of instruments, tuned to different scales, that then unite in a remarkable variety of complementary melodies. The many timbres and textures of the music are achieved by an orchestra of at least fifteen musicians.

In a special performance at the Museum, the Wesleyan Gamelan, under the direction of Mr. Sumarsam, visiting artist in the World Music Program at Wesleyan University, will present a program of the classical music of Central Java.

Mr. Sumarsam, born in East Java, has been playing gamelan music since he was eight years old. Trained at the Conservatory of Gamelan and the Academy of Gamelan, Surakarta, he has participated in a variety of international educational activities.

To order tickets use the adjacent coupon



Kendang



Klenang Beri Kemanak

Gamelan Instruments drawn by Yoshikazu Ogino, courtesy of the Asia Society

Special Events Coupon (see articles adjoining for prices)

Number of tickets	Price	Total
X	\$	= \$
X	\$	= \$

Music of the Andes
Javanese Gamelan
Total amount enclosed \$ (note that only Participating, Donor and Contributing Members may take the Members' discount).

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Registrar, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Music of the Andes

Wednesday, January 26, 7:30 p.m. Auditorium
\$6.00 for Members, \$8.00 for non-members

Tahuantinsuyo, a group of three talented musicians from South America, play music of the pre-hispanic cultures of the Andes. Using the traditional instruments of the cultures, they recreate the rhythms, harmonic structures and melodies of this long, musical tradition.

Most of the instruments are wind instruments. Many have ancient roots, such as the various pan pipes, and others are more recent, such as the

stringed *charanga* that shows the influence of the Spanish guitar.

Tahuantinsuyo has performed many times in the New York area and at the American Museum of Natural History. Members may remember their music from the exhibition *The Gold of El Dorado*. Early reservations are strongly advised for the performance.

To order tickets use the adjacent coupon



Members are cordially invited to
The Mack Lipkin Man and Nature Lectures

The World Transformed: Critical Issues in Contemporary Human Adaptation

Wednesday, January 19 — Tuesday, February 22 —
Tuesday, March 22 7:00 p.m. Auditorium. Free

The American Museum of Natural History is pleased to announce the inauguration of the Mack Lipkin Man and Nature Lectures. These lectures have been established to honor Dr. Lipkin's significant contributions to the field of biomedical science. The Man and Nature Lectures will bring prominent scientists and physicians to the Museum to discuss their work and its impact on the critical problems and challenges facing humanity. The first lecture series will be given by Dr. David A. Hamburg. These lectures represent part of the Museum's continuing commitment to bring current research in the natural sciences to the broadest possible audience.

Wednesday, January 19
— *The Evolutionary Background of Human Behavior*. Dr. Hamburg will discuss how a better understanding of the behavior of the monkeys and apes, as well as of our own early ancestors, can help us to cope with life in the radically altered environment of the 20th century.

Tuesday, February 22
— *Ancient Humans in the 20th Century: Problems Close to Home*. Dr. Hamburg will explore the suitability of our species to the drastic changes of the 20th century. He will examine from an evolutionary perspective such crucial problems as cancer, cardiovascular

disease, infant health, adolescent development, and our aging population.

Tuesday, March 22 — *Ancient Humans in the 20th Century: Worldwide Problems*. Dr. Hamburg will discuss what science can contribute toward progress on critical and related world problems including health and population in developing countries and international nuclear conflict.

Please use the adjacent coupon to reserve tickets for the series

Dr. David A. Hamburg

Dr. David A. Hamburg, a leading figure in health science and public policy, has just become president of the Carnegie Corporation, a philanthropic foundation established in 1911 by Andrew Carnegie. Prior to taking over his new position, he was head of the interdisciplinary Division of Health Policy, Research and Education, and the first John D. MacArthur Professor at Harvard University. He is also a past president of the Institute of Medicine at the National Academy of Sciences. Dr. Hamburg has contributed more than 120 papers to the new field of behavioral biology, chiefly concerning adaptation to stress. Over the past decade, he has devoted his energies to issues of health policy, including the potential uses of science and technology for meeting the social needs of children, the elderly, and developing countries.

The Mack Lipkin Man and Nature Lectures

Wednesday, January 19; Tuesday, February 22; Tuesday, March 22

Participating, Donor and Contributing Members are entitled to two free tickets. Associate Members are entitled to one. All other tickets are \$12.00 for the series, \$5.00 for individual lectures.

I would like _____ tickets to the lecture series

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed stamped envelope to: Man and Nature Lectures, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. Tickets will be distributed on a first-come first-served basis, so early reservations are advised.

The Department of Education Presents Spring Afternoon and Evening Lecture Series

Primates: Behavior, Ecology & Conservation

Five evenings starting February 15, 7:00 to 8:30 p.m. Fee \$35 (\$31.50 For Members). Wild populations of most of the world's 175 species of nonhuman primates are disappearing rapidly, especially in the tropical forests, which are the home of more than 90% of living primates. This course highlights the plight of these animals, emphasizing their intrinsic scientific interest and importance for their closest living relative, the human primate.

Tuesday, Feb. 15. Dr. Russell Mittermeier, Director of the World Wildlife Fund - U.S. Primate Program since 1979. The World's Endangered Primate Species: A Case Study on the Monkey of Brazil's Atlantic Forest. Discussion and screening of the new film "The Cry of the Muriqui" (26 mins.) by Andy Young.

Wednesday, Feb. 23. Dr. Randall Susman, Assistant Professor, Department of Anatomical Sciences, State University of New York at Stony Brook. The Behavior and Ecology of Pygmy Chimpanzees in Central Zaire. Richly illustrated with slides of Zaire, its people and its pygmy chimpanzees

Tuesday, Mar. 1. Dr. Alison Jolly, Guest Investigator at Rockefeller University and author of *A World Like Our Own: Man and Nature in Madagascar*. Lemur Behavior and Conservation in Madagascar. Showing of a new BBC film from the Horizon series on the lemurs of Madagascar.

Tuesday, Mar. 8. Dr. Sarah Blaffer Hrdy, Peabody Museum of Archaeology and Ethnology, Harvard University, and author of *The Langurs of Abu* and *The Woman That Never Evolved*. Female and Male Strategies of Reproduction in Langur Monkeys. Screening the CBC film "Hanuman Langurs: Monkeys of India" (28 mins.) which documents Dr. Hrdy's research.

Tuesday, Mar. 15. Dr. Charles Weisbard, Primate Researcher. Films of Old and New World Monkeys and Gibbons by C. R. Carpenter. Showings and discussion of "Howler Monkeys of Barro Colorado Island", 1960 (27 mins.); "Behavior of Macaques of Japan: The Macaca Fuscata of the Takasakiyama and Koshima Colonies," 1969 (28 mins.); "Active characteristics of Gibbons (Hylobates Par): Locomotion," 1974 (16 mins.)

Human Evolution

Three Monday evening starting February 28, 7:00 - 8:30 p.m. Fee: \$20 (\$18 For Members)

Dr. Ian Tattersall, Curator in the Museum's Department of Anthropology, and Dr. Niles Eldredge, Curator in Museum's Department of Invertebrates, present current thinking in the field of physical anthropology. They are co-authors of the recently published book *The Myths of Human Evolution*.

Feb. 28. *Evolutionary Thought Since Darwin*: Comparison of alternative models of the evolutionary process available today. What evolutionary patterns can we expect to find? Dr. Niles Eldredge

Mar. 7. *Overview of the Hominid Fossil Record*. History of discovery of the fossils, and alternative interpretations placed upon them. Dr. Ian Tattersall

Mar. 14. *The Hominid Fossil Record in the Context of Evolutionary Pattern*: What was the style of human evolution? What does it imply for the future? Dr. Ian Tattersall

Underwater Archaeology In The Ancient Mediterranean

Four Tuesday evenings starting March 1, 7:00-8:30 p.m. Fee: \$25 (\$22.50 For Members).

Dr. Anna Marguerite McCann explores recent underwater excavations at ancient harbor sites, fisheries and shipwrecks in the Mediterranean and discusses their significance for our understanding of our own maritime heritage. Discoveries at Phoenician, Greek and Roman ports and ships will be included, as well as a survey of ancient fishing practices and fisheries. Dr. McCann has directed and photographed many of the underwater excavations to be shown and is the author of many articles on the subject, as well as a book on the Roman port and fishery of Cosa, Italy, which she has recently excavated.

Mar. 1. *Ancient Harbors In The Mediterranean*: their evolution from the Phoenician, Greek and Roman worlds, including material from the port sites of Phoenician Carthage (Tunisia); Greek Kenchreai (Greece); Etruscan Populonia, Pyrgi and Roman Cosa (Italy), Caesarea (Israel), and Ostia (Italy)

Mar. 8. *Ancient Ships And Shipwrecks*: excavations of ancient ships found at Marsala (Sicily); Taranto (Italy); La Madrague de Giens (France); Yassi Ada and Serce Liman (Turkey); and Athlit (Israel). The history of shipbuilding and techniques of excavation are also discussed.

Mar. 15. *Ancient Fishing And Fisheries*: Egyptian, Greek and Roman fishing practices are surveyed, concentrating on recent excavations at the Roman fishery at Cosa. Ancient fish products and how and where they were made are included with illustrations from sites of Roman fish factories in Spain (Baelo) and North Africa (Tipassa, Lixus)

Mar. 22. *Treasures From The Deep*: major artifacts found in the sea and how they have contributed to our knowledge of ancient art and trade. Included will be the Greek and Roman bronzes as well as the common amphora jars used for commercial trade

Anthropology Through Films

Five Thursday evenings starting February 17, 7:00 - 9:00 p.m. Fee: \$35 (\$31.50 For Members)

What do Hare Krishna converts in Canada, an anthropologist working in Papua New Guinea and pilgrimages to the Ganges in India share in common? All are part of five evenings of unusual films providing insight into cultural behavior. Dr. Malcolm Arth, Chairman and Curator of the Museum's Department of Education introduces and discusses the works, and on several evenings is joined by the filmmakers.

Feb. 17. *The Followers* (79 mins.) by Gilles Blais 1981. Religious sects are a volatile subject. Follow three new converts to Krishna Consciousness in Canada over a period of a year.

Mar. 3. *Heaven On Earth: Pilgrimages To The Ganges 1957-1977* (70 mins.) by Pierre Amado 1978. Looking at pilgrimages over a twenty year span reveals their ongoing vitality along with the adoption of modern techniques to organize the world's spiritual congregation. Special Guest: Pierre Amado, Research Scholar, Sorbonne

Her Name Came On Arrows (26 mins.) by Allison

Jablonko and Stephen Olson. 1982. A rare glimpse of an anthropologist at work in a field interview in Papua New Guinea.

Mar. 10. *The Tragada Bhavai* (45 mins.) by Roger Sandall and Jayasinhji Jhala 1982. An occupational caste maintains an ancient theatrical art form in western Gujarat, India. Special Guest: Jayasinhji Jhala, Director, Institute of Audio-Visual Resources, Dhrangadhra, India

Mar. 17. *Stories From The Life Of A Balinese Healer* (Premiere) (40 mins.) by Timothy Asch and Linda Connor. 1983. *The Medium Is The Masseuse* (Premiere) by Timothy Asch and Linda Connor. 1983. Timothy Asch premieres his latest completed films from Bali. Special Guest: Timothy Asch, Associate Professor of Anthropology, University of Southern California

Mar. 24. Robert Gardner, creator of many outstanding ethnographic films, previews his latest work in progress. An Arhuaco group in the Northern Sierra Mountains of Colombia. Special Guest: Robert Gardner, Director, Carpenter Center for the Visual Arts, Harvard



Foraging For Dinner: Identifying, Collecting and Preparing Wild Foods

Six Tuesday evenings starting February 15, 7:00-8:30 p.m. Fee: \$35 (\$31.50 For Members)
Get to know the wild plants that have been used for food by people throughout the ages. In this series of lectures with slides and demonstrations, plants are examined, their cultural history noted, and methods of preparing the more common ones are shown. Dr. Helen Ross Russell, author of the book, *Foraging for Dinner*, has led scores of wild food forages in the metropolitan area.

Feb. 15. Philosophy Of Foraging: modern forages, conservation and responsibility; techniques for plant identification; a special look at the rose family
Feb. 22. Dangers And Benefits Of Foraging: types of plant poisoning; edible nightshades, mushrooms, sumacs, and poisonous beans
Mar. 1. Cooking, Beverage Making, And Preserving: providing for tomorrow; plants appropriate for each technique.
Mar. 8. Flowers In Your Cookpot: using ornamental plants for food; common identifiable specimens
Mar. 15. That Weedy Garden! Identifying and preparing edible wild plants that flourish in gardens
Mar. 22. Wild Plants In North And South American History: contributions to Native American cultures and to the cookpots of early settlers

Islamic Arts And Sciences

Five Tuesday afternoons starting February 22, 2:30-4:00 p.m., or Five Tuesday evenings starting February 22, 7:00-8:30 p.m., Fee: \$30 (\$27 For Members)
Paul J. Sanfaçon, Lecturer in Anthropology at the Museum, will bring into focus aspects of Islamic arts and sciences which he touched on only briefly in his well-received "The World of Islam" series. Illustrated with color slides of miniatures, illuminated manuscripts, and contemporary scenes, this series deals with the ways Islamic Civilization benefited from, and added to, Greek, Roman, and Indian accomplishments in the arts and sciences. From Spain to the East Indies, Muslim scholars contributed to a vigorous cultural exchange. Included are discussions of literary devices in prose and poetry, painting, perspective, and color theory, and the social conditions for Islamic art. Applications of mathematics in scientific theory and practice; the fusion of architecture, landscape gardening and urban planning are other subjects covered.

Feb. 22, Mar. 1, Mar. 8. Arts and Crafts: Unity of the Spoken and Written Word. (Poetry, Calligraphy, Painting, Ceramics, Architecture)

Mar. 15, Mar. 22. Theoretical And Practical (Applied) Sciences: Ingenious Responses to the Environment. (Mathematics, Astronomy, Pharmacology, Agronomy, Medicine).

Wild Flowers Of The Northeast

Five Tuesday afternoons starting February 15, 2:30-4:00 p.m., or Five Thursday evenings starting February 17, 7:00-8:30 p.m. Fee: \$30 (\$27 For Members).

Thousands of species of wild flowers are native to the various regions of the northeastern United States. Some are common; others are highly specialized and restricted in range. All are part of the web of life, and some function with unusual adaptations. There are insect-trapping bog plants, Arctic creepers on windswept mountaintops, and ornate woodland orchids. These, together with a selection of wild flowers of forest, meadow, pine barren, and wetland, will be discussed by Helmut Schiller, Lecturer in Botany at the Museum.

1. *What Is a Wild Flower:* how is it put together? Basic structure, family, and environment
2. *Wild Flowers Of Mountaintops And Northern Coniferous Forest:* above the timberline and in the evergreen woodland below
3. *Wild Flowers In Moist Environments:* the deciduous forest.
4. *Wild Flowers Of Dry Environments:* pine barrens and seashores.
5. *Wild Flowers Of The Wetlands:* bogs, marshes, and swamps

Animal Drawing

Eight Monday evenings starting March 7, 7:00-9:00 p.m. Fee: \$75 (materials not included). Limited to 25 persons.

Join us as we sketch gazelles on the African Plains, or draw timber wolves in the snowbound north. Using exhibition halls after the Museum closes to the public, students draw from realistic habitat groups as well as mounted specimens. Stephen C. Quinn, Senior Principal Preparator-Artist in the Museum's Exhibition Department, will discuss drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Different media and techniques are explored. Individual guidance is given to each participant from beginner to experienced artist. The following exhibition halls will serve as studios: The Akeley Hall of African Mammals, Osborn Hall of Late Mammals, Hall of North American Mammals, Hall of North American Birds, Hall of Late Dinosaurs, Hall of Ocean Life.

Exploring American Wilderness Areas

Six Monday afternoons starting February 28, 2:30-4:00 p.m., or six Monday evenings starting February 28, 7:00-8:30 p.m. Fee: \$35 (\$31.50 for Members)

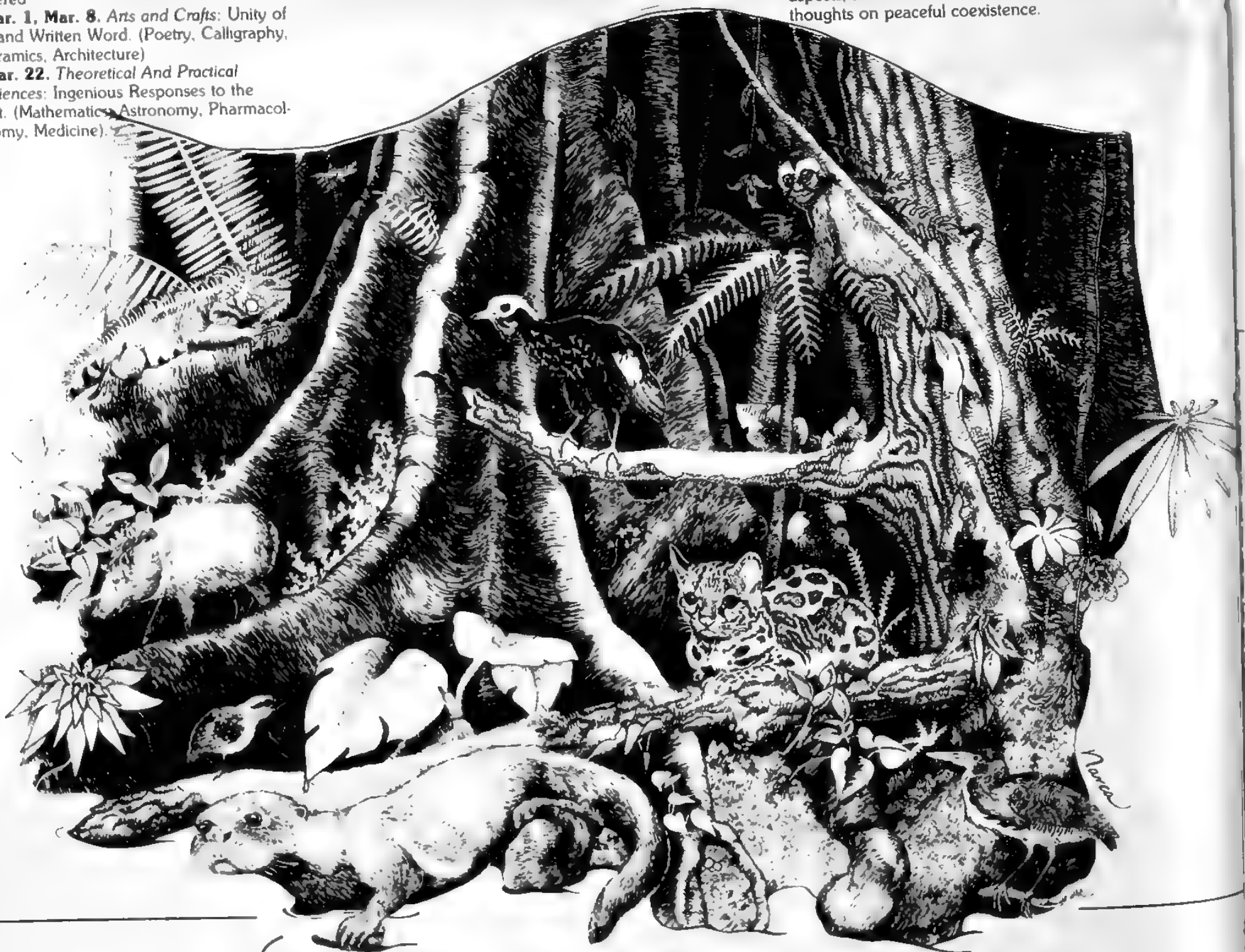
Much of the remaining scenic grandeur and wildlife of the United States and Canada is restricted to federally preserved areas such as national parks, monuments and wildlife refuges. With color slides, this series introduces some of the most beautiful and diverse of these regions. Emphasis is on plant and animal life, their conservation and ecological significance. Kenneth A. Chambers is Lecturer in Zoology at the Museum.

Feb. 28. Geyser Basins To Mangrove Swamps: Yellowstone and Grand Teton National Park; plant and animal life in sub-tropical Everglades.
Mar. 7. Desert Wildlife In New Mexico & Arizona: Chiricahua, White Sands and Carlsbad Caverns
Mar. 14. Pribilof Islands of Alaska & Wildlife Of The New York Adirondacks
Mar. 21. Wild Flowers & Big Game: Wild flower spectacular on Mt. Rainier; big game in the Canadian Rockies
Apr. 4. Land Of The Trembling Earth: Okefenokee National Wildlife Refuge
Apr. 11. Denali: The Great One: Tundra plants and animals of Alaska's Denali National Park

Insects: Earth's Most Successful Animals

Six Thursday evenings starting February 17, 7:00-8:30 p.m. Fee: \$35 (\$31.50 For Members)
Informal slide-illustrated talks introduce the fascinating world of insects. Alice Gray, Museum Associate in the Department of Entomology, discusses structure, life histories, environmental relationships, and the significance of insects to man.

Feb. 17. Insects And Their Place In The Animal Kingdom: introduction, basic anatomy, history, and present diversity; factors contributing to success
Feb. 25. Their Private Lives: how they grow, molting and its control, life histories and social behavior
Mar. 3. Bed And Board: insect habitats, food and feeding, shelter problems and reproductive potential.
Mar. 10. Hazards Of Insect Life: survival responses to competition, disease, predators and climate.
Mar. 17. The Senses Of Insects: how they are studied, communication among insects.
Mar. 24. Insects And People: harmful and beneficial aspects; how man affects the insect world; some thoughts on peaceful coexistence.



Festivals

Three Monday evenings starting February 28, 7:00-8:30 p.m. Fee \$18 (\$16 For Members). Around the globe people select special days to celebrate, hold festivals, and relax from the rigors of the normal work world. This program takes you to a dozen different countries and explores festivals in a variety of modern cultures. Anthropologist Dr. Alexander Randall compares celebrations in such places as Malta, Germany, Japan and Bali. Like a microcosm, each festival is a window on the society that created it. Emphasis is on the appropriateness of each celebration to the culture.

Feb. 28. Fastnacht And Carnevale. This pre-Lenten festival is a European mainstay with color, originality and all the madness of a street costume party. The contrast between the German celebration in Mainz and the Italians' version in Venice is striking, and reveals intercultural differences.

Mar. 7. Harvest. A successful harvest is always a reason to celebrate. In Spain the harvest of the sherry grapes is call for a high ritual, while in the Azores the fall fest is an excuse to run bulls in the street. Other agricultural fairs and harvest fêtes will be compared.

Mar. 14. Festivals Of Japan. The Japanese are masters of the community festival. In this program Dr. Randall will take us to a variety of Japanese celebrations from the national Bon in Tokyo to the blessing of a tiny village fishing fleet and into the mountains to find the fire festival of the Kurama Tengu. Color, pageantry and the vestiges of traditions in modern Japan are the themes for this evening.

Music Of The Andes

Five Thursday evenings starting February 17, 7:00-8:30 p.m. Fee: \$35 (\$31.50 For Members)

The sequence of cultures which preceded the Inca civilization produced a musical tradition which is distinctive to the Andes. Throughout several thousand years certain musical elements have remained constant. While many of these have blended with Spanish Colonial traditions, few have escaped the effects of contemporary communication systems. Five evenings with ethnomusicologist and filmmaker John Cohen, including special demonstrations and a performance by Tahuantinsuyo, films, and field recordings, develop these ideas fully.

Feb. 17. Ethnomusicology and its concerns as applied to Andean music. Native musical instruments used by the Quechua and Aymara Indians and those introduced in the Colonial period. Modes and rhythms of Andean music and associated songs and dances. Special Guest: Pepe Santana of Tahuantinsuyo.

Feb. 24. Music from Q'eros, an isolated herding community where music has remained relatively free from external influences. Film showing: *Q'eros: The Shape Of Survival* (53 mins.) John Cohen 1979

Mar. 3. Field recordings and ideas about popular and folk culture. The spread of the Huayno and the function of phonograph recordings, stage shows and tape recorders in perpetuating traditional music

Mar. 10. Early texts describing Inca music and the archaeological evidence for ancient musical traditions. Mythological and religious attributes connected with music. Special Guest: Dr. Craig Morris

would like to register for the following lecture series

Course(s):

Day(s): _____ Time: _____

Price: _____ (Note that Participating, Donor and Elected Members get a 10% discount on many courses)

Name:

Address:

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to *Afternoon and Evening Lecture Series*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Explore Weaving

Six Tuesday evenings starting February 15, 7:00-9:30 p.m. Fee: \$85 (materials included). Limited to 22 persons

In the past century archeologists have become increasingly aware of the antiquity and importance of weaving throughout the world. Phyllis Mandel, handweaver and anthropologist, leads participants in fundamental textile techniques, using simple equipment. Workshops also include lectures illustrated with beautiful color slides, and demonstrations of looms from Africa, Asia, the Americas, and the Pacific Islands. Participants complete three weaving projects, for which all materials are provided

Local Field Trips

For Weekend Field Trip itinerary and application, call (212) 873-7507.

Weekend Visit To St. Catherines Island

March 18-20. Limited to 25 people
Spend a full day on St. Catherines Island off the Georgia coast. This magnificent island, owned by the Edward J. Noble Foundation, is an outstanding research center for projects pertinent to its unique environment. It is rarely open to visitors.

Dr. David Hurst Thomas, Chairman of the Museum's Department of Anthropology, leads the tour of the island. Since 1974, he and his archeology field crews have conducted a study of the peoples who have inhabited St. Catherines over the last 4000 years. Zoology research projects on the island include the study of native animals and the propagation of those endangered species for which the climate and facilities are suitable. The weekend also features a private tour of historic Savannah. Conducted by Florence Stone, Coordinator of Special Programs, the weekend includes comfortable hotel accommodations in Savannah, all meals and round trip flights

Weekend Whale Watch Off Cape Cod

May 20-22 Limited to 45 people

A weekend of whale-watching off the rich feeding grounds of St. George's Bank, near Cape Cod, where several species of whales are commonly to be seen at close range. Our search for these magnificent creatures involves two day-cruises from Provincetown. In addition to the marine biologists who will be aboard the boat, two Museum staff members will accompany the group - Sydney Buffum, an instructor in the Education Department, and Stephen C. Quinn, an expert field ornithologist - to assist in identifying the many species of exciting pelagic birds

Other highlights of the weekend include optional nature walks along the sandy Cape Cod shoreline, and a visit to the historic Plymouth Plantation Village

Arrangements for this trip are made in cooperation with Sea International. Cost includes transportation, accommodations and all meals

Weekend In Geology

May 14 and 15. Limited to 36 adults

Two-day bus trip to survey geology between the Appalachian Plateau in northeastern Pennsylvania and the Coastal Plain of northern New Jersey. Along the Coastal Plain there are visits to Sandy Hook and the Highlands of the Navasink. Collecting stops are made enroute. The group is accommodated overnight near Parsippany. Dr. George Harlow, Assistant Curator, Department of Mineral Sciences at the Museum, leads this field study tour

Saturday Field Walks In Botany

Six full day walks starting April 23, 10:00 a.m. Fee \$70

Limited to 30 persons

During the spring blooming period, walks are taken to areas of botanical significance in New York City and vicinity to learn about wild plants, particularly the flowering forms. Identification and ecology of the plants are discussed informally. Helmut Schiller, Lecturer in Botany at the Museum

Two Saturday Bird Walks

May 7 and May 14 7:45 a.m. Fee. \$60. Limited to 36 adults

Ornithologist Stephen C. Quinn leads two full day bus trips

May 7. Birds of Field and Forest. Join a fascinating hike in the spring woods. An all day excursion by bus to Ward Pound Ridge to observe migrating wood warblers, tanagers, orioles, and other denizens of this beautiful woodland preserve

May 14. Marsh and Water Birds. An all day excursion by bus to the marshlands and estuaries of Jamaica Bay Wildlife Refuge, where we will observe the spring migration of waterbirds. Herons, egrets, waterfowl and shorebirds are a few of the diverse varieties of birds attracted to these rich wetlands.



Films Judged by Children

Sunday, January 9, 1:00 and 3:00 p.m. Kaufmann Theater. Free

Five outstanding selections from the 1982 Los Angeles Children's Film Festival will be screened at the Museum. Recognized internationally, this Festival, provides an opportunity for children to view films from around the world. It is unique among film festivals because the films are not only made for children, but are judged by them as well. The organizers of the Festival, the American Center of Films for Children, visit schools and other groups of children and encourage them to discuss their favorite films, even write critiques. Often their analysis is vastly different from the adults, giving everyone a new outlook on the films.

The five films are the result of this year's judging:

Suho and the White Horse. 1982. John Schindel (10 minutes, animated)

A Boy, a Dog and a Frog. 1981. Gary Templeton (9 minutes)

Craci 1981 Frederick Back. (10 minutes, animated) (Winner of the Ruby Slipper Award — Adult Jury, and the 1982 Academy Award for Best Animated Short Film)

Roller Skate Fever. 1981 Paul Shaper & Iradj Penah (10 minutes)

Kurtis the Hollywood Stuntboy. 1981. Peter Rowe & Paul Quigley (25 minutes) (Winner of the Ruby Slipper Award — Children's Jury.)



Pyramid Film and Video

From the award-winning film *Craci* about the fantastic life of a rocking chair

Courses for Stargazers

The American Museum — Hayden Planetarium is offering a large selection of courses in their winter term. Because class sizes are limited, early registration for all courses is suggested. Free parking is available to the capacity of the Museum lot for students in the evening courses.

Participating, Donor, and Elected Members receive a 10% discount on all courses. Senior citizens receive a 50% discount. For registration information call (212) 873-1300, ext 206.

Aviation

Ground School for Instrument Pilots. Fourteen sessions on Mondays and Wednesdays beginning January 10, 6:30-8:40 p.m. \$175 (\$157 for Members). Mr. Mayorga

Astronomy

Introduction to Astronomy. Eight Thursdays beginning January 13, 6:30-8:40 p.m. \$70 (\$63 for Members). Dr. Bartol

Stars, Constellations and Legends. Five Thursdays beginning January 13,

6:30-8:10 p.m. \$50 (\$45 for Members). Mr. Beyer.

How to Use a Telescope. Eight Wednesdays beginning January 12, 6:30-8:40 p.m. \$70 (\$63 for Members). Mr. Storch

For Young People

Introduction to the Sky. Ten Saturdays beginning January 15, 12:00-12:50 p.m. \$25 (\$22 for Members)

Astronomy One. Ten Saturdays beginning January 15, 10:30-11:20 a.m. \$25 (\$22 for Members).

Astronomy Two. Ten Saturdays beginning January 15, 9:30-10:20 a.m. \$25 (\$22 for Members)

Advanced Astronomy for Young People. Five Saturdays beginning January 15, 11:00 a.m. to 12:40 p.m. \$25 (\$22 for Members)

Navigation

Navigation in Coastal Waters. Ten Wednesdays beginning January 12, 6:30-8:40 p.m. \$95 (\$85 for Members). Dr. Hess.

Piloting for Sailboat Opera-

tors. Eight Mondays beginning January 10, 6:30-8:40 p.m. \$95 (\$85 for Members).

Introduction to Celestial Navigation. Ten Tuesdays beginning January 11, 6:30-8:40 p.m. \$95 (\$85 for Members). Mr. Pamham.

Advanced Celestial Navigation. Ten Thursdays beginning January 13, 6:30-8:40 p.m. \$95 (\$85 for Members). Mr. Pamham.

Electronic Navigation. Eight Mondays beginning January 10, 6:30-8:40 p.m. \$70 (\$63 for Members). Mr. Mueller.

Sexual Encounters of the Floral Kind

Sunday, January 23, 11:00 a.m., 1:30 and 3:30 p.m. Free and Open Only to Members

Last spring, Members had the opportunity to preview the film, *Sexual Encounters of the Floral Kind*. The film received such an enthusiastic response that we are offering it again as our January Family Members' program.

This spectacularly photo-

graphed, hour-long film explores the remarkable and at times unbelievable varieties of pollination. Unlike their counterparts in the animal kingdom, plants reproduce sexually but never meet their mates. Instead they have devised ingenious lures and deceptive traps so that insects,

birds, and other visitors will transport their pollen from one plant to another.

The film was made by John Cooke and members of the Oxford Scientific Films Company, some of the best natural history photographers in the world. In *Sexual Encounters of the Floral Kind*, the ingenuity of the photographers was matched only by that of their subjects. In one incredible sequence, the film shows a Costa Rican orchid entrapping a bee and then, while letting it escape through a secret passage, attaching a package of pollen to its back. Another sequence shows a lily in Sardinia that emits the odor of rotting flesh to attract blow flies. And in a third, an apparently peaceful lily becomes a deadly killer in order to get pollen from unsuspecting flies.

John Cooke, who during a seven year period travelled all over the world to make the film, will be on hand to introduce it and answer questions. Before joining Oxford Scientific Films, Dr. Cooke was an Associate Curator in the Museum's Department of Entomology.

To order tickets please use the adjacent coupon.

A Musical Tribute to Dr. Martin Luther King

Thursday, January 13, 7:30 p.m. Auditorium. Free

The contribution of Dr. Martin Luther King, Jr., to the black freedom movement was that of a leader who was able to turn protests into a crusade and to transform local conflicts into moral issues of nationwide concern. More than any one person he helped to establish the use of pride in one's cultural heritage as a tool to overcome prejudice. Using music and dance pieces with the theme of

pride, several artists will gather to give a musical tribute to the late Dr. King. The program includes singing, dancing, a gospel singing group, and an original piano piece by a composer from Ghana.

Sponsored by the Department of Education and the New York City Department of Parks and Recreation the program will be free to all Museum visitors. Seating is on a first-come first-served basis.

Sexual Encounters of the Floral Kind. Sunday, Jan. 23. Participating, Donor, and Contributing Members are entitled to four free tickets. Associate Members are entitled to one. All other tickets are \$2.50. Please indicate a first and second choice of times if possible.

11:00 a.m. 1:30 p.m. 3:30 p.m.

Please send me tickets

Name:

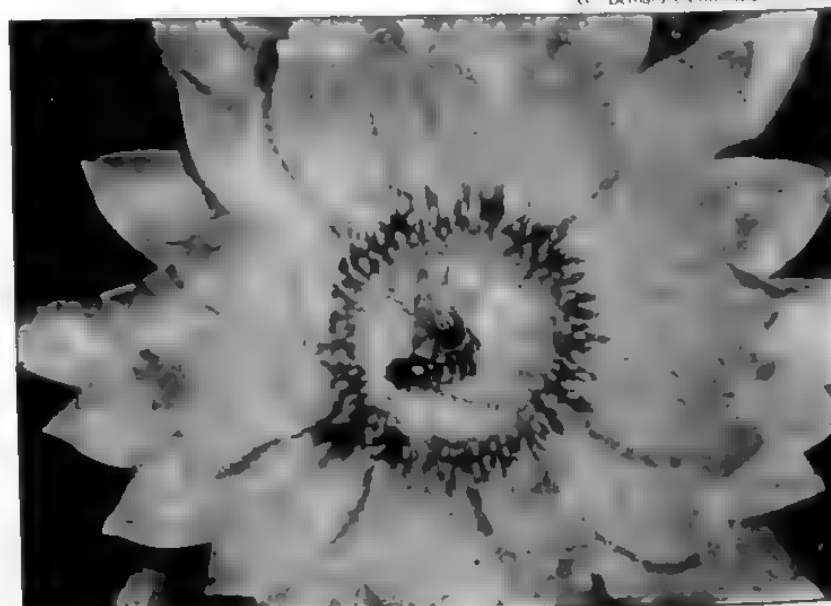
Address:

City: State: Zip:

Daytime Phone:

Membership category:

Mail with a self-addressed, stamped envelope to: *Sexual Encounters*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.



What secret pleasures await these lucky bees in this fertile flower?

Members' Notebook

Tales of Fish That Didn't Get Away

The collection of the Department of Ichthyology ranks seventh or eighth in the country in terms of numbers of fish and "type" specimens (the first discovered members of a species, and therefore the one by which the species is described). Its geographic coverage includes samples from the waters of every continent and every ocean. Its companion collection of prepared skeletons is unequalled anywhere in the world.

From the standpoint of the lay observer, however, the most impressive aspect of the collection is that most of it — there are well over a million specimens — has been acquired in the last twenty years through the back-breaking work of the current curators. The collection is about seven times the size it was when they began.

In 1961, when Dr. Donn Rosen joined the staff, he was asked by the director of the Museum to coordinate the "rehabilitation" of the existing collection. This included fish from the famous Central Asiatic Expeditions and the Lang-Chapin Expedition to the Congo, among others. Because of long-term neglect and bad storing, the rehabilitation was more of a salvage operation: much of the storing alcohol had evaporated off leaving hardened specimens in some cases and a gelatinous "fish soup" in others; many specimens had been stored unlabeled and uncatalogued. On top of this, most of the glass storage jars were permanently sealed with an epoxy-like cement of fishoil and dirt. Of the 20 thousand lots (a lot contains an average of ten fish), only parts of 15 thousand could be saved. Five thousand lots were completely useless and had to be thrown out. The process of recataloguing involved everyone in the department. All were given hammers to get into the old storage vessels. Dr. Rosen says it was like opening Christmas presents: you were never sure what you might find inside. One by one the lots were

transferred to new containers, labeled, catalogued and stored in a retrievable manner. After almost a year the old collection had a proper home, and the curators were again able to concentrate on their own endeavors.

From then until now they have conducted a series of expeditions that added more than 700,000 specimens to the collection. This includes major collections from the Bahamas, Australia, tropical America, and New York State.

Collecting is not what it used to be. No longer can we afford to send out scientists with hundreds of workers to carry supplies and to line the banks of rivers to assist in collecting. Technology now allows two or three to do the work of many: planes, boats and helicopters have opened up areas that might be otherwise inaccessible, deep sea vehicles are now far more sophisticated, there are new and better methods of trapping the fish, even the aqualung greatly simplifies the study of habitats. But extensive field work can be expensive and time consuming.

So it was with understandable enthusiasm that the department recently acquired three new and important collections — all significant in size — without so much as taking their waders and nets out of the closet. Two of these come from environmental impact studies of power plants on the Hudson River, and the third consists of 15 thousand catalogued lots of fishes from the Polytechnic and State University of Virginia (VPI).

VPI was spending more on storage space than the use of the collection justified. In fact it had been stored unused for several years in a vacated supermarket. Since our collection receives so much use — loans are sent out all over the world, and the department receives more than 200 visitors annually — we were a likely institution to bring the collection back into the mainstream of research. In fact the VPI

collection, which focusses on the fish of the southeastern United States, will be a boon to our own collection (which had been weak in that area) and to the graduate student program in particular where there already is interest, some of the fish groups being studied occur in the Southeast, and are well represented in the new collection.

The other two major acquisitions were collected more recently and closer to home. One was by the Power Authority of the State of New York, responsible for monitoring the effect of riverside powerplants on the Hudson's environment, and the other came from Lawler, Matusky and Skelly, the engineering firm contracted by Con Edison (under a court order) to survey the river and determine the environmental impact of their plants including the Indian Point nuclear reactor. The two collections together number more than 50 thousand lots.

Both of these collections were time consuming and expensive, but their purpose was to answer a specific question: if Con Edison modified the aquatic environment — in this case by sucking large quantities of water out of the river to cool power plants, then returning it in an obviously modified state — how would this disrupt the life cycles of the creatures in the water? The study determined that most adult fish could swim against the intake current and therefore escape being sucked into the system. Larval fish could not, however, so the utilities are required to time their maintenance shutdowns between spawning periods.

But once this work was accomplished, a large number of fish specimens were lying around taking up storage space. Rather than destroy them, they were offered to the Museum.

The impact study collections are still packed in drums waiting to move into a newly planned addition to the department's storage facilities. This will be equipped by a generous grant from the National Science Foundation. The Hudson River specimens need to be identified and catalogued. The VPI specimens are unpacked and being readied for incorporation into the main collection.

Collecting is getting more and more expensive, and it probably will never get less. (The collecting, for the Westway environmental impact study, for example, will cost an estimated \$5 million, and that doesn't require travel to another continent.) Collecting serves many important practical functions, however. When some years ago the government discovered the high mercury levels in game fish, no one was sure whether the level was normal and had always been that high, or if the mercury was a newly introduced contaminant. What they needed to answer the question were samples of game fish going back to before 1900, and of course one of the places to find them was a collection such as ours. With each specimen collected, with each one studied, we increase our understanding of the natural world. With each one stored we retain the ability to answer questions yet unasked.

— Stanton G. Orser



Dr. C. Lavett Smith, (left) curator in the Department of Ichthyology, collecting fish in a river in upstate New York.



Technology has simplified collecting and studying fish in the past fifty years. The aqualung, for example, allows a scientist to observe habitats first-hand.



Dr. Donn Rosen, curator in the Department of Ichthyology, with a member of the departmental collection. He and the other current curators of the department have increased the size and scope of the collection to one of the greatest in the world.

Museum Notes

Special Exhibitions

Star Gods of the Ancient Americas. Through March 27. The first major exhibition ever of ancient Americans' fascination with the heavens. A vivid display of works in gold, turquoise, wood, stone, textiles, and ceramics representing three thousand years of images of the sun, moon, stars and planets.

1982 Origami Holiday Tree. Through January 6, Roosevelt Rotunda, second floor. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jelly fish and much, much more. A delight for both children and adults.

Exploring the Deep Frontier (January 18 through May 15 in the Roosevelt Rotunda, second floor). A collection of photographs, exhibits and equipment showing people's progress in overcoming the obstacles of deep ocean exploration. Displays range from primitive diving bells to space age diving suits and submersibles. There is a companion exhibit of **Deep Ocean Photography** (See article page 1.)

February at the Museum

Black History Month. Leonhart People Center. Weekends from 1:00 to 4:30 p.m.

Music from Wesleyan Gamelan Orchestra. Tuesday, February 2 at 7:30 p.m. Auditorium. Tickets required (See article page 3.)

Galactic Health Adventure with Slim Goodbody. Saturday, February 12. Planetarium. Reservations required (See article page 3.)

Weather or Not. Wednesday, February 16 at 7:30 p.m. Auditorium. Reservations required. (See article page 9.)

Education Courses. Begin Monday, February 21 (See pages 5 to 7.)

Membership Benefits

Participating and Donor Members receive
Free admission to the Museum for up to two adults and four children

One year's subscription to *Natural History* magazine
Six free tickets per year to the *Naturemax Theater*

One year's subscription to the newsletter *Rotunda*

10% Discount at all the Museum Shops and on most courses at the Museum

Behind-the-Scenes Tours, special receptions for new exhibitions, evening and weekend programs, and other special events

25% Discount on all Planetarium admissions

Use of the Members' Reading Lounge

Visiting privileges at the Museum's research station in Arizona, and other travel opportunities

For Membership information call (212) 873-1327

Planetarium Events

Star of Wonder. Through January 4, 1983. What was the "Star of Wonder" that led the wise men on their journey to Bethlehem? Was it a comet? A bright meteor? Some have suggested that it was a supernova or even a rare grouping of planets. This show is a celebration of the holiday season for the whole family.

Wanderers in the Night. January 5 through February 28. Learn the secrets of the planets, their legends and actual origins, and what modern science has determined about their physical properties. Explore the fascinating history of each from swift Mercury to cold, dark Pluto. Sky show times: Weekdays: 1:30 and 3:30 p.m.

Saturday: 11 a.m., and hourly from 1:00 to 5:00 p.m.

Sunday: hourly 1:00 to 5:00 p.m.

Admission for Participating, Donor and Elected Members is \$2.25 for adults, \$1.25 for children. For Non-Member prices call 873-8828.

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and 1:00 to 4:00 p.m. on Saturday and Sunday. It is closed on Monday.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday and Saturday: 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday and Saturday evenings from 5:15 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday



through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.

Southwest Research Station. Museums Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, (212) 873-1300.

Itzamna, the Maya lord of the sky, is honored in this thousand-year-old temple model from the exhibition *Star Gods of the Ancient Americas* (Gallery 3, through March 27). In early chronicles, one of Itzamna's titles was Tzab or "rattlesnake's rattle" which referred to the constellation known today as the Pleiades. *Star Gods of the Ancient Americas*, organized by the Museum of the American Indian, is the first major exhibition ever to explore this subject. A wide variety of objects ranging from six-foot-tall Northwest Coast "moonposts" to a gold Peruvian calendar show the remarkable level of astronomy that was achieved by these cultures.

Members' Tour of the Month The Treasures of Meso-America



Ceramic Ducks from Colima/AMNH

Join us for a tour of the Hall of Mexico and Central America and one of the finest collections of pre-Columbian artifacts in the world. The tour will provide an introduction to the Aztec, Maya, Olmec and lesser known cultures of the region. Members will learn about the magnificent temples, complex imagery and beautiful artifacts that have been an endless source of fascination and mystery to scholars and laymen alike.

All tours are led by volunteers from the Museum's Highlights Tour program. To register, please use the adjacent coupon.

Members' Tour: Mexico and Central America

Wednesday, February 2 at 6:30 p.m.
Saturday, February 5 at 10:30 a.m.
Sunday, February 6 at 11:00 a.m.
Wednesday, February 9 at 6:30 p.m.
Saturday, February 12 at 10:30 a.m.
Sunday, February 13 at 11:00 a.m.

Number of people _____

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime Phone _____

Membership category: _____

Please mail with a self-addressed stamped envelope to: *Mexico Highlights Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes January 21.

[illegible]

It was a very good year. Thanks in no small part to the corporate contributors listed below. They helped us stay open 363 days last year; more than any other cultural institution in New York. In fact, in last few years, we've been able to increase the hours we're open by 40%. So more than 2½ million people were able to visit the last year. From around the block, around the country, and around the world. They came to see the Halls of Minerals and Gems. The Hall of Asian Peoples. And all our other exhibitions, great and small.

And so, sponsors, the dinosaurs thank you. The great whale thanks you. The elephants thank you. We owe a lot to you. And we never forget it.

[illegible][illegible][illegible]

As you can see, there is still room on our list. If your company isn't here, but would like to be, please contact Mr. Robert G. Goeler, President, American Museum of Natural History, Central Park West at 79th Street, New York 10024. This is a good year to join us; every dollar you contribute will be matched in part by a Challenge Grant from the National Endowment for the Arts.

11

Sun

Mon

Tue

Wed

Thu

Fri

Sat

January 1983

New Year's Day

(Museum open)

American Museum Discovery Tours leaving this month:

Mexico

.....January 10

Indian Ocean Cruise

.....January 21

Mayan Sites in Mexico

.....January 31

For information call (212) 873-1300, ext. 397

2

2:00 p.m. N.Y. Shell Club

Room 426. Free.

Earth at Perihelion (closest to Sun)

3

Quadrantid Meteor Shower

4

7

Last Quarter (half moon)

8

1:00 - 4:30 p.m. The Mediter-

anean World: Spain. Free

Leonhardt People Center.



9

1:00 - 4:30 p.m. The Mediter-

anean World: Spain. Leonhardt

People Center. Free

1:00 and 3:00 p.m. The Interna-

tional Children's Film Festival. Kaut-

mann Theater. Free. (See article

page 8.)

16

12:30 p.m. American Ceta-

cean Society. Rm 319. Free

1:00 - 4:30 p.m. The Mediterra-

anean World: Italy. Leonhardt People

Center. Free.

2:00 p.m. N.Y. Turtle & Tortoise

Society. Rm. 129. Free.

2:00 p.m. N.Y. Paleontological

Society. Rm. 426. Free.

11

8:00 p.m. Linnean

Society. Kaufmann

Theater. Free.

12

7:30 p.m. N.Y. Min-

eral Club. Leonhardt

People Center. Free

8:00 p.m. Amateur Astrono-

mers' Association. Kaufmann

Theater. Free.

13

7:30 p.m. A Musical

Tribute to Dr. Martin

Luther King. Auditorium.

Free (See article page 8)

14

New Moon

15

1:00 - 4:30 p.m. Mound

Builders Symposium. Reser-

ventions required. Kaufmann Theater

1:00 - 4:30 p.m. The Mediterra-

anean World: Italy. Leonhardt People

Center. Free.

Martin Luther King's Birthday

18

7:30 p.m. Exploring

the Deep Frontier,

with Sylvia Earle. Mem-

bers' Evening Program.

Reservations required. Audio-

rium. (See article page 1)

8:00 p.m. N.Y. Entomolog-

ical Society. Rm. 129. Free.

Exploring the Deep Fron-

tier open in the Roosevelt

Rotunda (See article page 1.)

19

7:00 p.m. Mock

Lipkin Man and

Nature Lectures with Dr

David Hamburg. Reservations

required (See article page 4)

22

1:00 - 4:30 p.m. The Medi-

terranean World: Greece

Leonhardt People Center. Free. First

Quarter (half moon)

23

11:00 a.m., 1:30 and 3:30

p.m. — Sexual Encoun-

ters of the Floral Kind. Family

Members' program. Reservations

required. (See article page 8.)

1:00 - 4:30 p.m. The Mediterra-

anean World: Greece. Leonhardt Peo-

ple Center. Free.

25

8:00 p.m. Linnean

Society. Kaufmann

Theater. Free

26

7:30 p.m. Tahuantini-

suyo Reservations

required. Auditorium (See

article page 4)

7:30 p.m. Lapidary & Gem

Society. Leonhardt People

Center. Free.

27

7:30 p.m. N.Y.

Microscopical Society

Rm 149. Free

28

Full Moon

29

1:00 - 4:30 p.m. The Medi-

terranean World: The Bal-

kans. Leonhardt People Center.

Free

30

10:30 a.m. N.Y. Herpeto-

logical Society. Rm. 426.

1:00 - 4:30 p.m. The Mediterra-

anean World: The Balkans. Leonhardt

People Center. Free

31

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 7, No. 2 February 1983



Focus on the Monkey Business

A recent poll reported the startling fact that 44% of Americans believe the biblical story of creation to be a scientifically accurate theory of human evolution. In response, the Department of Education has included two series of lectures addressing this problem in their Spring Afternoon and Evening Lecture Series. *Human Evolution* (three Monday evenings starting February 28) will be taught by Drs. Niles Eldredge and Ian Tattersall, curators at the Museum and co-authors of the recently published book *The Myths of Human Evolution*. Their three lectures will explore evolution theory since Darwin and provide an overview of the hominid fossil record. *Primates*

Behavior, Ecology and Conservation (five evenings starting Tuesday, February 15) will bring five outstanding primate researchers to discuss their research, the relevance that studying our closest cousins has in helping us understand our own origins, and the impending extinction of most of the 175 species of non-human primates.

A wide variety of other courses explore wild flowers of the Northeast, how to find your dinner growing in fields and vacant lots, the fascinating world of insects, anthropology through films, festivals around the world, and the music of the Andes Mountains in South America. In addition, there are workshops in weaving and animal

This young Rhesus monkey is a macaque from Asia. Many species of primates are included in the course Primates: Behavior, Ecology and Conservation to be offered this spring.

drawing, and weekend fieldtrips both local and the length of the East Coast.

A full course listing appeared last month in the January issue of *Rotunda*, and many courses fill rapidly. For more information call the Department of Education at (212) 873-7507.

Threads That Bind

Weekend programs throughout the month of February celebrate Black History Month. The festival includes lectures, musical programs, storytelling and two exhibits.
Page 2

Fading Feast

Raymond Sokolov, author and columnist in *Natural History* magazine will present a lecture on regional American foods and his attempts to document them before they vanish.
Page 3

Stories of the Stars

Storyteller Laura Simms will spin the yarns of the ancient cultures of the Americas, relating the myths that grew from their understanding of the skies.
Page 3

The World of Animals

Bill Robinson will return to the Museum with another all new program on the wonders of the animal kingdom.
Page 6

Goodbody Goes Galactic

Join Slim Goodbody on a Galactic Health Adventure as Members premiere his new show at the Hayden Planetarium.
Page 6

The Folk Inheritance of Black America

Weekends in February, Leonhardt People Center. Free.

To commemorate Black History Month, the African-American program of the Department of Education will present special weekend programs throughout the month of February.

The cultural heritage of African and Afro-American peoples will be highlighted through storytelling (African proverbs, Br'er Rabbit stories),

social and political lectures (Egypt Through the Eyes of L. D. Frazier), and the visual and utilitarian arts (A Touch of Folklore and More, The African Craftswomen). Two exhibits of original artwork will be displayed in the Leonhardt People Center, (*Threads that Bind and Visions of Home*), providing a dynamic, multi-dimensional backdrop for the

celebrations

On Sunday, February 13, in the Kaufmann Theater, a one-woman show by Cheryl Jones — *Great Women of Color* — will offer a historical perspective. Included among others are the Egyptian Queen Hatsheput who made herself Pharaoh, and suffragette Ida B. Wells.

On Sunday, February 27,

in the Kaufmann Theater, the Frank Lowe Sextet will present a musical tribute to W.C. Handy, the great jazz musician and songwriter. Frank Lowe will also perform two of his own pieces that reflect the jazz tradition in which he was raised.

The Montego Joe Septet will swing from New Orleans to modern jazz (Saturday and

Sunday, February 19 and 20), and Lou Myers will feature excerpts from his Off Broadway show "Do Lord Remember Me" (Sunday, February 27).

Many other programs will be presented each weekend. For a complete listing see the calendar on page 8. For more information on individual programs, call (212) 873-1300, ext. 502.



Photograph carved on a red camwood box from the Congo/AMNH

The Underwater World of Eugenie Clark

Wednesday, March 2, 7:30 p.m. \$6.00. Auditorium

In the coral reefs of the Yucatan, divers have noticed sharks that appear to be "sleeping." Scientists have long believed that sharks must continually move, creating a flow of water across their gills, in order to survive. With great interest, therefore, a number of scientists, including Dr. Eugenie Clark, investigated and found sharks lying around in caves, very approachable, with respiration rates down below normal. By all appearances they were "sleeping" and could be rudely awakened by a tweak to the ribs.

This fascinating discovery and other aspects of research on sharks will be part of a special program presented at the Museum by the American

Littoral Society. Dr. Eugenie Clark, marine biologist and author, will speak on the wondrous undersea life of the Caribbean, the Red Sea and the Pacific Ocean. Special emphasis will be given to sharks (including a new film, *Sharks for Children*), sand divers (fish that live near the bottom of the sea and plunge with great regularity and at great speed into the sand), garden eels (eels that emerge from their holes in clusters and, while anchored to the bottom, sway in the currents like sea grass and feed on plankton and other invertebrates), and on the fish and fisheries of Japan and other parts of the Pacific Ocean.

Dr. Eugenie Clark is a Pro-

fessor of Zoology at the University of Maryland, and author of the popular books, *The Lady with the Spear* and *The Lady and the Sharks*.

To order tickets send a check and a self-addressed, stamped envelope to: American Littoral Society, Highlands, New Jersey 07732. For more information call (201) 291-0055.



Going Deeper

Roosevelt Rotunda, Second Floor Through May 15. Free

Exploring the Deep Frontier is a traveling exhibit examining the lure that the ocean has held over so many generations of people. The exhibit uses an array of film clips, photo murals, and life-size models to lead visitors through diving history, from primitive diving bells that took air under water the way an inverted glass can, through to the present high-technology equipment.

Because of its formidable barriers, the ocean depths have been virtually as inaccessible and unexplored as the outer planets. With the advent of space-age diving suits and submersibles that are capable of withstanding the intense pressures at the ocean bottom, scientists and explorers are finally seeing areas first-hand that have until now only been imagined.

Presented by the California Academy of Sciences and the National Geographic Society, the exhibit will be free to all Museum visitors.



Chuck Nodder/National Geographic Society

ROTUNDA

ISSN 0194-6110

Vol 7, No 2
February 1983

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Temes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant
Sarah Clifford — Writing Intern

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y.

341

Printed by Waldon Press, Inc., New York

True Grits: In Search of American Cuisine

Wednesday, March 16. 7:30 p.m. Auditorium
\$2.50 and Open Only to Members and Their Guests

On an unusual mission for *Natural History* magazine, Raymond Sokolov has crisscrossed the country over the past few years in search of traditional regional foods. He has managed to locate — on rural back roads from Eastport, Maine, to San Diego, from Puget Sound to Key West — some of the rugged individuals who are still willing to combat the Goliaths of modern agribusiness in order to preserve their customs and satisfy their palates. Sokolov has talked with these last practitioners of regional cuisine, collecting their recipes and recording the food wis-

dom of our past before it fades completely from view.

Raymond Sokolov will discuss regional American cuisine and his experiences in search of it for our March Members' Evening program. Drawing from his vast and fascinating experiences he will give several examples of regional foods, explain why they are so special to the people who make them, and show why they are rapidly disappearing. At the end of the program he will show Stanley Woodward's film, *Grits*, on the corn staple unique to Southern cuisine.

To order tickets please use the adjacent coupon.



Raymond Sokolov, author and columnist for *Natural History* magazine, will give a lecture on the vanishing regional foods of the United States and his experiences in seeking them out.

True Grits Wednesday, March 16

This program is open only to members of the museum and their guests.

Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$2.50. Associate Members are entitled to one. All other tickets are \$5.00.

Number of Members' tickets	X \$2.50	\$
Number of additional tickets	X \$5.00	\$
Total amount enclosed		\$

Name _____

Address _____

City _____ State _____ Zip _____

Membership category _____

Daytime Phone _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *True Grits*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Man and Nature Lectures

Dr. David A. Hamburg, president of the Carnegie Corporation and a leading figure in health science and public policy, is the speaker for the first *Mack Lipkin Man and Nature Lectures*. These lectures will bring prominent scientists and physicians to the Museum to discuss their work and its impact on the critical problems and challenges facing humanity. Dr. Hamburg's subject is *The World Transformed: Critical Issues in Contemporary Human Adaptation*.

In his first lecture, Dr. Hamburg discussed how a better understanding of the behavior of other primates can help us to cope with life in the radically altered environment of the 20th century. The second and third lectures are **Tuesday, February 22** — *Ancient Humans in the 20th Century: Problems Close to Home*. Dr. Hamburg will explore the suitability of our species to the drastic changes of the 20th century. He will examine from an evolutionary perspective such crucial problems as cancer, cardiovascular disease, infant health, adolescent development, and our aging population.

Tuesday, March 22 — *Ancient Humans in the 20th Century: Worldwide Problems*. Dr. Hamburg will discuss what science can contribute toward progress on critical and related world problems including health and population in developing countries and nuclear conflict.

A limited number of tickets are still available for the final two lectures. For more information or to order tickets, please call (212) 873-1327.

Starlore of the Ancient Americas

Friday, March 4. 7:30 p.m. Kaufmann Theater
\$4.00 and open only to Members and their guests



"Raven Stealing the Moon" by Robert Davidson. According to Northwest Coast Indian legend, the raven had to steal the heavenly bodies from a chief who kept them hidden in boxes. Storyteller Laura Simms will spin the tales of starlore of the ancient Americas for a special Members' evening.

Anyone who visits our current exhibition *Star Gods of the Ancient Americas* will marvel at the wonderful imagery that Native Americans came to associate with the heavens. Myths and legends evolved to explain the origins of day and night, the sun and the moon, and the movement of the stars across the sky. According to Plains Indian myths, the Milky Way is made from animal tracks and is the path of dead souls across the sky. Mayan legend has the moon and sun as twin heroes who defeated the Lords of Death in a ball game played in the underworld.

Members can celebrate this rich Native American folklore with storyteller Laura Simms

in a program entitled *Starlore of the Ancient Americas*.

Accompanied by Steve Gorn on flute and pan pipes, she will spin tales from peoples of both North and South America. There will be an Andean tale of the birth of dawn and the morning star, a Northwest Coast origin myth entitled *The Girl Who Walked Among the Stars*, and many more.

Laura Simms has performed at the Museum numerous times, most recently in a special program *The Storytellers*. She has told myths and legends throughout the United States and is a leader in the revival of storytelling as an art form. To register, please use the adjacent coupon.

Starlore of the Ancient Americas Friday, March 4

Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$4.00. Associate Members are entitled to one. All other tickets are \$6.00.

Number of Members' Tickets	X \$4.00	\$
Number of non-members' Tickets	X \$6.00	\$
Total amount enclosed:		\$

Name _____

Address _____

City _____ State _____ Zip _____

Membership category _____

Daytime Phone _____

Please make check payable to American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Starlore*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Flights of Fancy

Wednesday, February 23. 7:00 p.m. Kaufmann Theater. Free

From the animated film Step by Step by Faith Hubley. This film will be included in an evening of six of her films

An ancient Chinese creation myth tells of P'an Ku, a friendly giant who was hatched from a primordial egg. When he cried, his tears became all the waters of the world. When he died, his eyes floated into the heavens as the sun and moon, and the rest of him became the world and all its creatures. This is one of the stories depicted in Faith Hubley's film, *Big Bang and Other Creation Myths*, which will be included in a program at the Museum of six of her films. *Big Bang* begins with an animated interpretation of science's "Big Bang" theory — that the universe originated in a cataclysmic release of energy — which is followed by six animated creation myths from primitive cultures around the world. Included are the African *Bumba* who vomits up the world creature by creature, and the Yuchi (Native American) crab who digs the earth out of a watery bowl of mud.

A second film, *Enter Life* takes the viewer through an animated history of life on earth from a bubbling primordial ooze to proteins and up the evolutionary ladder to early life forms.

Faith Hubley worked for many years with her late hus-

band John Hubley creating short animated films. The content of their films broke away from the clichés and "formulas" of cartoons, and thereby represented a significant development in the art of animation. Their goal was not to have the mouse escape the cat, or for the prince to save the princess, but to "increase awareness, to warn, to humanize, to deepen our understanding of ourselves and our relationships with each other." Together they produced more than twenty films that received Academy Awards or nominations. Since her husband's death in 1977, Faith Hubley has continued to produce award-winning films.

The program, produced by the Department of Education, will be free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are encouraged to arrive early. Below is a listing of the films in the program. Note that they may not be shown in the listed order.

Big Bang and Other Creation Myths (11 mins)
Starlore (6½ mins)
Enter Life (6½ mins)
Step by Step (11 mins)
Voyage to Next (9½ mins)
Sky Dance (11 mins)



Faith Hubley

Weather Wise

Wednesday, February 16. 7:30 p.m. Auditorium.
 Free and open only to Members and their guests

Years ago, if someone wanted to know what the day's weather would be like, they would simply lean out their window and look at the sky. Now we turn on our televisions to look ahead. Weather forecasters are an integral part of any news team, performing their apparent wizardry with satellite photographs and

charts of high and low pressure areas. In fact, the art of forecasting is a highly complex science.

Members are invited to step behind the curtain to hear one of these wizards explain how meteorologists create the daily forecast. Dr. William Gutsch will explain how, with the use of twenty-four hour ground

and satellite observations, as well as balloons, radar and highly sophisticated computers, meteorologists track weather movements and predict how they will affect a particular area. In addition he will examine winter weather phenomena that affect the Northeast in particular. Using special satellite footage, he will track the birth and development of a winter storm.

Dr. Gutsch is Chairman and Associate Astronomer of the American Museum — Hayden Planetarium as well as science correspondent and meteorologist for WABC-TV. Before coming to New York City, he served as Staff Astronomer at the Strasenburgh Planetarium in Rochester, New York and did the forecasting for the ABC and NBC affiliates there. To register for the program please use the adjacent coupon.

Join us to learn how meteorologists, those wizards of weather forecasting, evaluate information from a surprising number of sources (from satellites to balloons!) to determine what the next days' weather will bring.



AMNH



AMNH

Weather Wise, Wednesday, February 16

This program is open only to Members of the Museum and their guests. Participating, Donor, and Contributing Members are entitled to four free tickets. Associates are entitled to one. Additional tickets may be purchased at \$4.00 each.

Please send me _____ tickets.

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime Phone _____

Membership category: _____

Please mail with a self-addressed stamped envelope to: Weather Wise, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

Members' Notebook

Bringing Back an Underwater Fairyland



AMNH

The tropical reef community on the island of Tongareva includes not only the marine life such as coral, mollusks and gloriously colored fish, but the natives of the island, as well

In the vast expanse of open sea about 2000 miles due south of Honolulu, lies the coral atoll of Tongareva. Composed of a series of long, narrow islets connected by stretches of coral reef, it forms a ring-shaped island eleven miles in diameter. The ocean crushes against the outside of this ring with considerable violence, but the tough coral walls enclose a peaceful lagoon. Magnificent underwater formations of the island's coral grow here, undisturbed by the ocean's force. Here also thrive countless manne creatures in tropical abundance, including the pearl oyster. The natives of the island once dove for these, retrieving them in great quantity and selling them by the ton to traders who sought them for the iridescent "mother of pearl" that lines their interior.

These facts were noted by Dr. Peter Buck, director of the Bishop Museum in Honolulu, who had spent time studying the island's inhabitants in the 1930s. He passed this information to his friend Dr. Roy Waldo Miner of the American Museum of Natural History — a curator in the Department of Invertebrates who wanted to collect and study some of the oysters. Miner's intention was to build a habitat group in the Hall of Ocean Life that would include not only the oysters and the coral reef community, but the native divers in the act of collecting the oysters as well.

Preparing this underwater group posed some difficult problems. Habitat groups at the Museum traditionally document an actual location. Beginning with the magnificent Hall of African Mammals, safaris had been sent with professional artists to sketch what would become the background and prepare studies of plant and animal life to make up the foreground. To continue in this vein meant not only finding an area representative of the community, but documenting it with painstaking accuracy as well. The fact that it was underwater was not grounds to fabricate information and create a "typical" example. The ecosystem of the coral reef community was already known to be extremely intricate and interrelated, and much scientific information would be gathered in years to come. If assumptions were made based on existing information, errors might be made that would show up later. Better to document it exactly as found and insure its timelessness.

So in the fall of 1936, through the generosity and cooperation of Templeton Crocker of San Francisco who placed his schooner yacht, the ZACA, and its crew at the Museum's disposal — the expedition to Tongareva slipped through a narrow pass in the coral atoll and motored into the quiet lagoon. The Museum personnel consisted of Roy Waldo Miner as

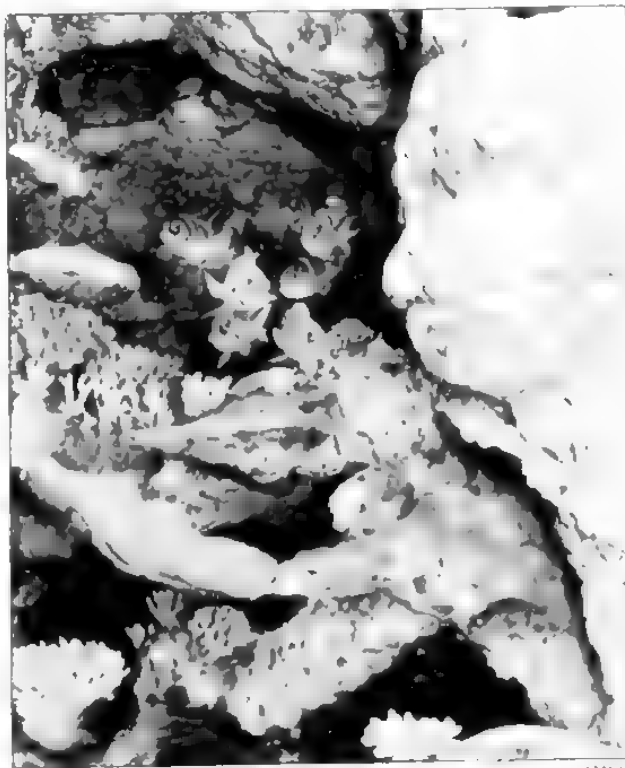
leader, Wyllis Rosseter Betts, Jr. as field associate and Chns D. Olson as the departmental artist and modeler. Toshio Asaeda, a Japanese artist, was signed on to capture the delicate colorings of the tropical fish as they were collected because they were known to fade in captivity. The crew of the ZACA formed the core of the support staff.

For two or three days, with the help of natives who knew the reefs intimately, they surveyed the area trying to choose localities to be explored. The water was so clear that by using glass-bottomed buckets they could peer from the surface and see sixty feet in any direction. Several sites were selected and the exploration began.

Because of the underwater nature of the work, two boats full of equipment were required — one to hold cameras, film and the boxes to protect them underwater, and one to carry the two diving helmets, air pumps and hoses, waterglasses, hand nets, and a brass-rope ladder from which the divers could get in and out of the boat. By using great helmets into which air was pumped from the surface, the scientists and artists could descend into the environment they were exploring and document the details as though they were collecting on land. Being underwater they could also experience first-hand the wonder and magnificence of the coral shoals they were trying to reproduce. Dr. Miner wrote of his first dive.

I turned from the ladder and saw before me the precipitous side of the shoal, rising above me in terraces, with overhanging growths of fantastic shapes, adorned with the most beautiful corals imaginable in rich purples, blues, browns, saffron, orange and green. Their shapes varied from huge rounded domes to the most delicate lacework, interspersed with contorted fingerlike lobes. Round about me and above my head flitted fishes of the most gorgeous and weird combinations of color and form, many of them reflecting the sunlight like jewels of coruscating brilliancy and changing prismatic hues. The immediate neighborhood was as transparent as air. I could see fully 100 feet in all directions before the gathering luminous blue fog of the watery distance limited my vision. The under-surface of the water above me gleamed with silver, reflecting like a mirror when quiet, and changing into dancing quicksilver when a breeze threw the surface into ripples and waves.

I took a step forward, half floating. A push of my foot sent me in a gentle, slow-motion slide over a pinnacle as high as my waist, and I settled down on the other side, my toes balancing on a great purple dome, as lightly as a thistle-down.



AMNH

Ten tons of real coral are included in the exhibit. This was collected with great care to insure an exact reconstruction. The fish were cast from molds of real fish and colored precisely from sketches made at the site.

Using the cameras, Dr. Miner shot thousands of feet of film to document the marine life among the reefs. Both he and Betts carefully wrote out all of their observations, since much of what they saw had never before been documented. There was no telling what might or might not prove useful. With the help of native divers, they collected ten tons of beautiful corals, the largest and finest being a beautiful spiral growth weighing 900 pounds and measuring five feet in diameter.

Colorful fish, intimidating moray eels and octopuses, scores and scores of pearl oyster shells, and other invertebrate creatures were gathered and brought to the surface. Those that were expected to lose their color were given to Toshio, the Japanese artist, who would quickly make an accurate record of their color patterns. Each evening he would then translate his sketches into finished paintings to be used as guidelines when the exhibit was prepared. Plaster molds were made of each fish so that the exhibition staff, using Toshio's paintings, could recreate not only the kind of fish, but the exact individual.

For all the color of Toshio's paintings, however, there remained the problem of documenting the corals. Both the background and foreground would be made up largely of these shoals, and their accuracy was critical to the integrity of the exhibit. The thousands of feet of film would provide all the needed structural information, but as they were filmed in 1936, they were of course in black and white.

For a comparable land exhibit, the expedition would simply have had an artist paint a series of landscapes.

Now, down the ladder, came another pair of legs. It was Olsen, equipped with the other helmet. In his hand he had a nonrustable metal palette, with oil colors arranged around its margin in the conventional manner. When he reached the sea bottom, he waited until an easel of the same metal was lowered, framing a sheet of plate glass with oiled canvas stretched over it. He then carried this outfit a short distance away, set up his easel on a rock, and, standing before it, looking like a hobgoblin in his diving helmet, proceeded to lay oil colors on the oiled canvas, pressing them down with his palette knife, thus painting undersea the color and arrangement of the coral formations.

The final element of the habitat was the divers themselves. Photographic studies were made of two natives both under water and on land, and from these the sculpted figures could be made.

The final assembly of the exhibit required casting wax models of all the fish and assorted manne creatures, coloring them accurately, recoloring the faded coral, and creating "new growths" where the ten tons proved insufficient. The films and underwater landscapes provided all the necessary details, but it required five artists and their assistants to translate the information into a reality.

In an article describing the finished project, Dr. Miner wrote:

It represents two Tongarevan pearl divers plunging down into a coral gorge, faithfully reproduced from one of the magnificent formations that we actually visited on the sea floor of Tongareva. In the midst of this submanne fairyland, they are engaged in plucking precious pearly shell clusters from the ocean bed, darning the menacing octopus sliding out from the entrance of a mysterious sea cave. The divers swim and grope past beautiful and grotesque coral growth to find their prizes among sea gardens of stone flowers, glowing in all the soft colors of the spectrum, while fishes of every gaudy hue dart past them.

In the center of the foreground, prominently placed, is the 900 pound spiral acropore coral, the pride of the expedition. Beneath it lurks a scarlet, sixteen-pointed sea star with hundreds of poisonous spines menacing from its upper surface, still threatening the scientist who collected it, the artist who recreated it, and the sharp-eyed visitors who happen upon it every day.

— Stanton Orser

A Prairie Dog and a Kinkajou, Too

Sunday, March 27. Kaufmann Theater
11:00 a.m., 1:00, 2:30, 3:45 p.m.
Free and Open Only to Members

Bill Robinson, one of our most popular family lecturers, will return to the Museum this spring with a kinkajou, a scarlet macaw, a prairie dog and a host of other live animals to

present an all new *World of Animals* program. Mr. Robinson will discuss the lifestyles of each of the animals, the myriad ways they have adapted to their environments and

their ecological importance

He will explain how the long tail of the kinkajou, a member of the racoon family, helps it survive in the forests of central and South America. The program will also look at how different animals are threatened by humans — some because of their popularity, like the macaw which is widely sought as a pet, and others because of their unpopularity, such as the prairie dog which has been killed off because it damages crops and competes with livestock for food.

To register for the program, please use the adjacent coupon. Early reservations are strongly advised.

How does the long tail of the kinkajou help it survive in the rain forests of South America? Find out at Bill Robinson's World of Animals

The World of Animals Sunday, March 27

Participating, Donor and Contributing Members are entitled to four free tickets. Associate Members are entitled to one. All other tickets are \$2.00.

Number of tickets
11:00 a.m. 1:00 p.m. 2:30 p.m. 3:45 p.m.
(Please indicate a first, second and third choice, if possible.)

Name _____

Address _____

City: _____ State: _____ Zip: _____

Membership category _____

Daytime Phone _____

Mail with a self-addressed, stamped envelope to: *The World of Animals*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.



Slim Goodbody Goes to the Stars

Saturday, February 12. Hayden Planetarium
Members Preview, 10:15 and 11:30 a.m.
\$3.00 for Adults, \$2.00 for Children



How would your body survive in an alien world? What precautions would you need to take to protect your health? If you only had the stars and planets to navigate by, how would you find your way?

Members and their children are invited to preview Slim Goodbody's new Galactic Health Adventure at the Planetarium. Upon entering the Sky Theater you will be enlisted into the National Air and Health Administration (NAHA) and become a member of Captain Goodbody's crew. Once safely lifted out of the atmosphere by NAHA's

carrot-shaped rocket ship, the crew will join Captain Goodbody in specially designed galactic exercises and songs, and will learn how to navigate by the stars. The mission will crash through an asteroid belt, and might accidentally wander into areas of space known to be inhabited by pirates. In addition you will visit other planets and their moons and learn how your body would fare in such hostile environments.

Before joining NAHA, Captain Goodbody was a television star on planet Earth's Captain Kangaroo Show. He is the author of two books (*Mr. Slim Goodbody Presents the Inside Story* and *What Can Go Wrong and How to Be Strong*) as well as a record album designed to teach children about health concepts. He is now expanding his performance to include other worlds.

The show, recommended for all ages, will appear February 14 through 19, and March 28 through April 2. February 14 through 18 the show will be at 11:25 a.m. February 19, and March 28 through April 2 it will be at 11:00 a.m. For more information call (212) 873-1300, ext. 206. **The special Members' previews on Saturday, February 12, will be the only shows for which you can reserve tickets in advance.** To order tickets for the Members' preview please use the adjacent coupon.

Slim Goodbody Saturday, February 12

Number of children's tickets x \$2.00 \$
Number of adults' tickets x \$3.00 \$
Total payment enclosed: \$

10:15 11:30 (Please indicate a first and second choice if possible.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please make check payable to The American Museum of Natural History, and mail with a self-addressed, stamped envelope to: *Slim Goodbody*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Fiesta Kubata

Saturday, February 26, 1:00 and 3:00 p.m.
Kaufmann Theater. Free



Roberto Borrell y su Kubata

An "orisha" is a deity of the Yoruba people of Nigeria whose specific characteristics oversee and determine the functions of humans and nature. When many Yoruba were taken to Cuba as slaves, the Spanish colonizers tried to force Catholicism on them. In the face of heavy-handed missionaries, the Yoruba disguised their "orisha," assigning each the figure of a Catholic Saint, so they could worship in peace.

The *Fiesta Yoruba*, as danced by Roberto Borrell y su Kubata, recreates the song, dance, and rhythms used by the Yoruba to worship their "onsha." This will be one of several traditional Cuban dances performed by Grupo Kubata in their program at the Museum.

Made up of sixteen dancers, drummers and singers, Roberto Borrell y su Kubata is dedicated to rediscovering and preserving the traditional forms of Cuban music and dance. Their program will

include the *Abakua*, a secret society dance of African origin considered by many observers to be religious (here again, to continue their traditional culture without interference, they incorporated a Christian crucifix into the rituals), and the *Comparsa*, the celebratory street march used in such festivals as *Día de los Reyes* (Day of Kings) and *Corpus Christi*.

The program is produced by the Caribbean program of the Department of Education in cooperation with Boys Harbor, Inc. **Free tickets for both performances will be distributed on a first-come first-served basis near the first floor Information Desk beginning at 11:30 a.m. on the day of the performance.** Please note that no more than two tickets will be given to any one adult in line. The limited tickets for both performances are expected to go quickly, so Members are advised to arrive early to avoid disappointment.

Museum Notes

Special Exhibitions

Star Gods of the Ancient Americas. Through March 27 The first major exhibition ever of ancient Americans' fascination with the heavens. A vivid display of works in gold, turquoise, wood, stone, textiles, and ceramics representing three thousand years of images of the sun, moon, stars and planets.

Exploring the Deep Frontier (January 18 through May 15 in the Roosevelt Rotunda, second floor). A collection of photographs, exhibits and equipment showing people's progress in overcoming the obstacles of deep ocean exploration. Displays range from primitive diving bells to space age diving suits and submersibles. There are also two companion exhibits on deep ocean photography and invertebrate life.

Membership Benefits

Participating and Donor Members receive

- Free admission to the Museum for up to two adults and four children.
- One year's subscription to *Natural History* magazine
- One year's subscription to the newsletter *Rotunda*
- 10% Discount at all the Museum Shops and on most courses at the Museum
- Behind-the-Scenes Tours, special receptions for new exhibitions, evening and weekend programs, and other special events.
- 25% Discount on all Planetarium admissions
- Use of the Members' Reading Lounge

Visiting privileges at the Museum's research station in Arizona, and other travel opportunities

For Membership information call (212) 873-1327

March at the Museum

Starlore of the Ancient Americas. Friday, March 4 Kaufmann Theater. Reservations required (See article page 3)

True Grits. Wednesday, March 16 Reservations required (See article page 3)

Korup Film on Cameron's rain forest. Wednesday, March 9 at 6:30 p.m. Auditorium

Bill Robinson's World of Animals. Sunday, March 27 Reservations required (See article page 6)

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty-feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off of the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater: (212) 496-0900. Currently the films are:

To Fly!, a history of American aviation complete with barn-storming in the midwest, ballooning over Niagara Falls and hang-gliding off volcanic cliffs in Hawaii

Living Planet, an overview of the evolution of life from a

drop of water to the technological achievements that brought about New York City and space exploration

Man Belongs to the Earth, an ecological study of the human impact on the fragile world we inhabit

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday 10:00 a.m. to 5:45 p.m. Wednesday, Friday and Saturday 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday and Saturday evenings from 5:15 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays 3:30-7:00 p.m. Saturdays and Sundays noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Coat Checking. For your

convenience the coat check room is located in the basement next to the cafeteria, and on the second floor at the main entrance. There is a 40¢ charge per item.

Planetarium Events

Wanderers in the Night. Through February 28. Learn the secrets of the planets, their legends and actual origins, and what modern science has determined about their physical properties. Explore the history of each from swift Mercury to cold, dark Pluto.

Sky show times
Weekdays 1:30 and 3:30
Saturday 11 a.m. (except February 19), and hourly from 1:00 to 5:00 p.m.
Sunday, hourly 1:00 to 5:00 p.m.

Admission for Participating Donor and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices call 873-8828.

Slim Goodbody's Galactic Health Adventure. Blast off with the star of Captain Kangaroo to learn how to navigate by the stars and how your body would survive on foreign planets. (See article page 6.)

Show times
Special Members' Premiere (reservations required) Saturday, February 12, 10:15, 11:30 a.m. \$3.00 for adults, \$2.00 for children. (See article page 6.)

February 14 through 18: 11:25 a.m. Saturday, February 19 11:00 a.m.

Admission for Participating Donor and Contributing Members is \$3.00 for adults, \$2.00 for children. For non-member prices call 873-8828.

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and 1:00 to 4:00 p.m. on Saturday and Sunday. It is closed on Mondays and holidays.

People Center. Ethnic programs featuring dance, music, films, lectures and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Cats, Kids and Killer Whales

Sunday and Monday, February 20 and 21
Kaufmann Theater. 1:00 and 3:00 p.m. Free

Movies to laugh at, to learn from and movies that dispel common myths are all part of the Family Film Festival at the Museum produced by the Media Center for Children. This two-day film festival includes ten movies about animals and people throughout the world.

Laugh along with *Felix Gets the Can* as that famous feline with more tricks in his bag and trouble in his tracks tries to get a meal. Listen to a ten-year-old boy, blinded since the age of three, as he talks about his life, his friends, and how well he gets along in a world he cannot see (*My Friends Call Me Tony*). Question a history of assumptions about killer whales in *We Call Them Killers*, which suggests

that people have unfairly maligned these sleek mammals.

The program, in two parts, will be shown on both Saturday and Sunday. Each section lasts about an hour. Presented by the Department of Education with the Media Center for Children, the program will be free to all Museum visitors. Seating will be on a first-come first-served basis. Note that the films at 1:00 and at 3:00 p.m. are different.

1:00 p.m. (both days)
Felix Gets the Can, a classic featuring the resourceful cat Rosie's Walk, pursued by a hungry fox. *The Golden Fish* a boy, his fish and a cat. *Anansi the Spider*, the Ashanti trickster is rescued from

various predicaments. *We Call Them Killers*, questioning the myths about killer whales.

3:00 p.m. (both days)
Cheechako's First Day, debut of a baby polar bear. *A Little Girl and a Gunny Wolf*. *Red Riding Hood* with a twist. *Bighorn*, *Rocky Mountain Sheep*. *My Friends Call Me Tony*, a blind boy and how he copes. *Teach Me to Dance*, growth of a friendship.

Just how vicious is a killer whale? Find out in one of the films in the Family Film Festival this month.



Sun

Mon

Tue

Wed

Thu

Fri

Sat

6 1:00 — 4:30 p.m. *Black History Month African Kingdoms — A Touch of Folklore and More.* Egypt Through the Eyes of L.D. Frazier. The Yoruba Yesterday and Today. Leonhardt People Center. Free. (See article page 2.)

7 Last Quarter (half moon)

8 8:00 p.m. *Linnean Society* Kaufmann Theater Free

9 7:30 p.m. *N.Y. Mineral Club* Leonhardt People Center Free.

10

11

5 11:00 a.m. *N.Y. Map Society* Room 129. Free.
1:00 — 4:30 p.m. *Black History Month. African Kingdoms — A Touch of Folklore and More.* Egypt Through the Eyes of L.D. Frazier. The Yoruba Yesterday and Today. Leonhardt People Center. Free. (See article page 2.)

12 10:15 and 11:30 a.m. *Special Members' Premiere of The Galactic Health Adventure with Slim Goodbody.* Reservations required. (See article page 6.)
1:00 — 4:30 p.m. *Black History Month. The Oral Tradition — African proverbs. Br'er Rabbit stories. Songs & Games of Afro-American Heritage.* Leonhardt People Center Free. Lincoln's Birthday (Museum open)

19 1:00 — 4:30 p.m. *Black History Month. Black American Influences — Afro-American Cooking. Montego Joe Sepiet. Maheba. A Woman's Journey Through the Black Fashion World (1660-1982)* Leonhardt People Center. Free. (See article page 2.)

14 New Moon

15 8:00 p.m. *N.Y. Entomological Society* Room 129 Free
Department of Education's Afternoon and Evening Lecture Series begins today (See article page 1)

16 7:30 p.m. *Weather Wise.* Members' Evening Program Reservations required. Auditionum (See article page 4)

17 7:00 p.m. *Systematics Discussion Group* Room 419. Free

13 1:00 and 3:30 p.m. *Black History Month "Great Women of Color"* Kaufmann Theater Free
1:00 — 4:30 p.m. *Black History Month The Oral Tradition — African proverbs. Br'er Rabbit stories. Songs & Games of Afro-American Heritage* Leonhardt People Center. Free. (See page 2)
2:00 p.m. *New York Shell Club* Room 426 Free.

20 1:00 — 4:30 p.m. *Black History Month* (See listings for February 19)

21 1:00 and 3:00 p.m. *Family Film Festival* Kaufmann Theater Free (See article page 7)

22 7:00 p.m. *Mack Lipkin Man and Nature Lecture with Dr. David A. Hamburg* (See page 3)
8:00 p.m. *Linnean Society* Kaufmann Theater Free
First Quarter (half moon)

23 7:00 p.m. *Flights of Fancy* Six animated films by Faith Hubley
Kaufmann Theater. free (See page 4)
Society Leonhardt People Center Free

24 7:30 p.m. *N.Y. Microscopical Society* Room 419 Free

1:00 p.m. *American Cetacean Society.* Room 319. Free.
2:00 p.m. *N.Y. Turtle & Tortoise Society.* Room 129. Free
2:00 p.m. *N.Y. Paleontological Society.* Room 426. Free.

27 1:00 and 3:00 p.m. *Black History Month. Jazz Tribute to W.C. Handy with Frank Lowe* Sextet & special vocalist.
1:00 — 4:30 p.m. *Black History Month. The Creative Force — "Do Lord Remember Me".* Contemporary Black American Artists. The African Craftswomen. Leonhardt People Center Free (See article page 2)

28 Full Moon



A bronze figure from the Western Congo/AMNH

February 1983
American Museum of Natural History

DOTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 7, No. 5 May/June 1983



African Textiles

Opens Wednesday, June 15, in Gallery 3. Free

The most obvious use of textiles is as clothing, either for modesty, warmth, costumes, or ceremonial dress. But textiles are also used to drape shrines or houses, to appease members of the spirit world, to armor horses, and to act as currency.

African Textiles is the first major exhibition devoted to the textiles from the continent of Africa. The exhibition contains striking examples of craftsmanship ranging from the magnificent colors and patterns of the court dress of kings to quilted cotton horse armor. It also illustrates both the simple and complex technological processes used in the creation of these fabrics. Seven different kinds of loom will be on display, with photo essays and diagrams that explain the techniques and artistry involved. Each raw material — cotton,

silk, wool, raphia, and bast — will be shown in the different stages of textile production: collecting the material, spinning the yarn, weaving, embroidering, dyeing.

The exhibition also touches on the social and economic roles of male and female weavers, exploring from an anthropological point of view the differences between cultures throughout the continent. The narrow "strip weaving" of West Africa, for example, is done only by men, in part because the strip looms take up a great deal of space and require weaving outdoors. The looms used by women stand upright, usually against a wall, so they can weave in their houses without being drawn away from their other domestic responsibilities.

African Textiles marks the first time

An old man in a Nigerian village wearing his best gown of red, yellow, and pale blue cotton with dark green silk embroidery

that the British Museum has ever lent an entire major exhibition from its collections to any institution abroad. Their collection of African textiles and weaving equipment is the oldest and most extensive in the world. The exhibition will be free to all Museum visitors. **For information on lectures, performances, and the special Members' preview, please turn to pages 6 and 7.**

More on Textiles

A special Members' premiere of the *African Textiles* exhibition, as well as lectures and performances by experts in African artistry, are planned to celebrate the opening of this spectacular exhibition. **Pages 6 and 7**

June Jaunts

A day-long whale watch for young people and a trip up the Hudson at sunset with Sidney Horenstein are two of the special events offered this summer by the Department of Education. **Page 5**

Americas at the Museum

May is Latin American Month at the Museum. In addition to weekend programs focusing on our Latin neighbors, there will be a Caribbean film festival, a lecture/performance on the African roots of Cuban jazz, and a performance of traditional dances of the Americas to highlight our summer activities. **Page 4**

Go North, Young Man

May is the 58th anniversary of Lincoln Ellsworth and Roald Amundsen's attempt to fly to the North Pole, a two-day trip that left them marooned for weeks on the frozen polar sea. **Page 8**

Members' Memo Expanding Our Relationship

The cover headline of the most recent issue of *Museum News* (the official publication of the American Association of Museums) succinctly summed up the problems facing museums across the United States: "Inflation, Recession, Government Cuts." According to the story, more than half the museums in the country have suffered a reduction in government funding, and more than one third have been forced to reduce their budgets to some extent.

The American Museum of Natural History is no exception. Our government support has not kept pace with inflation, and as I am writing this article we are being threatened with cuts in city and state funding. At the same time, the costs of everything from mailing this newsletter to taking care of the dinosaurs have risen.

To help us offset these cuts and rising costs, it will be necessary for us to raise our Membership rates. Effective this July, Associate Membership will increase from \$15 to \$18, Participating from \$30 to \$35, and Donor from \$50 to \$60. We want you to hear about this increase before it appears on your renewal cards. We also want to let you know that all of our present Members will have one more opportunity to renew at the old Membership rates. An announcement about this renewal offer will be sent to you in a separate mailing, or

along with your renewal.

We are also introducing two new categories of Membership. So many of you give generous donations above your Membership dues that we are formally establishing these categories to recognize greater support. *Contributor* memberships are \$250 and \$500, and the Museum's special *Friends* category honors those who give \$1000 or more each year.

In addition to the benefits you now enjoy as a Participating or Donor Member, these new categories offer the opportunity to become even more acquainted with our collections, our scientists and the work they do. *Friends* and *Contributors* will be included in departmental open houses where they will have the rare opportunity to meet and chat with the scientists under informal conditions. In addition they will be invited to several gala events and special functions each year.

These new categories serve primarily as an acknowledgment of your generous level of support, but they are also part of the Museum's continuing efforts to broaden our base of support in order to meet the economic challenges of the 80s. At the present time, the Development Office is working hard to establish a strong constituency of *Friends*. If you have any questions regarding these new categories, please call (212) 873-5927.

A Free Book and a New Benefit

I am pleased to announce the recent inauguration of the Members' Book Program. It will give Members the opportunity to purchase superb natural history books at discounts of up to 40% off the publisher's price. Notices of available books will appear in *Rotunda* and *Natural History* magazine.

To kick off the program, we would like to offer Members a free copy of *Ants, Indians, and Little Dinosaurs*, a 377 page paperback of the best from 75 years of *Natural History* magazine. It includes classic pieces by such distinguished scientists as Margaret Mead, Teilhard de Chardin, George Schaller and Lewis Thomas. If you would like to receive a copy as well as the list of currently available books, please send your name and address with \$1.00 for postage and handling to *Members' Book Program*, Room 10, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024. Or you can pick up a free copy on weekends at the Membership Desk on the first floor, by the Great Canoe in the 77th Street Lobby.

Henry H. Schulson

Henry H. Schulson

The Black West

Wednesday, May 18, 7:00 p.m. Kaufmann Theater. Free

James Beckworth was one of the West's outstanding frontiersmen, and he eventually became a chief of the Crow Indians. He was also a co-founder of the city of Denver and discovered the lowest point across the northern Sierra Nevada, enabling thousands of settlers to flock to California during the gold rush. James Beckworth was a black man.

The history of the West is full of such figures. One fourth to one third of the cowboys were Blacks, and Blacks of the West enjoyed a freedom that was unknown in the East. They opened businesses, built churches and schools, were in gunfights, and rode the range both as cowboys and desperados.

When the epic of the West was written, most Blacks were left out of this American saga. Because of this, Whites cannot appreciate the contribution of Afro-Americans to the development of the nation,

and Blacks do not recognize their legacy in the country-western culture.

In a slide-illustrated lecture that is the result of years of research, William Loren Katz will discuss this lost history of Black America. "They rode the trails," says Katz. "They just never had the opportunity to ride across the pages of history books, TV Westerns or Hollywood movies."

William Loren Katz is the author of numerous books on Blacks and other minorities, including *The Black West* and *Black People Who Made the Old West*. He has taught at Columbia, NYU, and is currently teaching at The New School for Social Research.

The lecture, sponsored by the African American Program of the Department of Education, will be free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are advised to arrive early to avoid disappointment.



Nat Love, known as "Deadwood Dick," was one of many blacks who settled the West.



**It's Not Just a Film,
It's an Adventure!**

NATUREMAX
AMERICAN MUSEUM OF NATURAL HISTORY

(For summer film schedules call (212) 496-0900.)

ROTUNDA



ISSN 0194-6110

Vol 7, No 5
May/June 1983

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y. 341

Printed by Waldon Press, Inc. New York

Will Sidney Horenstein Buy the Brooklyn Bridge?

Sunday, May 22, 10:00 a.m., 12:15 and 2:30 p.m.
\$5.00 and open only to Members and their guests

This May the Brooklyn Bridge will be 100 years old. To celebrate its centennial anniversary, Members are invited to join Museum naturalist Sidney Horenstein for a natural history tour of the

Brooklyn Bndge/City Hall area. The tour will provide a glimpse of what the city used to look like. Members will walk along New York's original shoreline and visit the site of what once was the island's

largest natural pond. Mr. Horenstein will explain how Pearl and Water and Front streets got their names. And of course the tour will go to the Brooklyn Bndge. Members will learn about the

bdge's history and the geologic history of the stones — taken from almost two dozen quarries — used to build it. A highlight of the tour will be the search for the 380-million-year-old coral fossils embed-

ded in the bdge's walls. The tour will last approximately two hours and will be held rain or shine. To register for the tour please use the adjacent coupon. Early reservations are strongly advised.



The Brooklyn Bndge as seen from the Brooklyn side. The bndge, on its 100th anniversary, will be the subject of one of Sidney Horenstein's natural history tours of the urban environment.

Happy 100th Brooklyn Bridge! Sunday, May 22
Tours are open only to Members of the Museum.
Please indicate a first and second choice of times:
10 00 a m 12 15 p m 2 30 p m

Number of people _____
I have enclosed my check for \$ _____ (\$5.00 per person)

Name _____

Address _____

City _____ State _____ Zip _____

Daytime Phone _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Brooklyn Bridge, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Happenings at the Hayden

Your Child and Mr. Moon

Is your child old enough to ask, "Why is the sky blue?" "Where does the sun go at night?" and "What are the stars?" The Hayden Planetarium is presenting a new sky show, written as a "first experience" for preschoolers. This is the first time that the Planetarium has designed a show expressly for this age-group. *Wonderful Sky* explores the celestial world at a level readily accessible to young children: what the sun is, how clouds obscure it during rain, where and when to look for rainbows, and why the moon is in different parts of the sky, with different shapes, depending on when you look.

The show will be presented for four days — April 26, May 12 and 26, and June 14 — at 11:25 a.m. Tickets are \$1.00 for children through age twelve, and one adult is admitted free with every five children. All other tickets are \$3.50 apiece. For reservations or more information call the Hayden Planetarium at (212) 873-5714.

Life in Space?

During the summer months the sky show will be *Is Anyone Out There? The Search*

for Life in Space. Do alien cultures exist? What are the odds? Philosophers and scientists have recorded their speculations since the fifth century B.C. *Is Anyone Out There?* considers the history of this speculation and explores its validity. Because of certain requirements for organic life to survive, not all stars would make good suns: some are too hot, some too cool, and some blow up. Not all have orbiting planets, yet given the extraordinary number of possibilities, there is a great temptation to let the imagination run wild. Included in the show are some old conceptions of moon men and martians, as well as the discoveries that finally dispelled our notions of them. There is also a discussion of what "quasars" might be telling us, and how we should communicate with aliens, since they might not learn English as readily as *E.T.*

The sky show can be seen weekdays at 1:30 and 3:30 p.m.; weekends hourly from 1:00 to 5:00 p.m. There is an additional show on Saturdays at 11:00 a.m. Tickets for Members are \$2.25 for adults, \$1.25 for children. For non-member prices call (212) 873-8828.

Black and White and Read All Over

Wednesday, May 4, 7:30 p.m. Auditorium
Free and open only to Members and their guests

Why does a zebra have stripes? Are they used for camouflage? Do they help zebras identify one another, or are they part of the zebra's warning system? How does the white-tail deer use his white rump? Does it tell predators "I've seen you so don't try to catch me"? And what about the black and white markings of skunks, Philippine stink-badgers and other animals that emit foul odors? Do they warn enemies to "Stay away or else!"?

Dr. Richard Van Gelder of our Department of Mammal-

ogy will investigate these and other questions at our May Members' Program when he presents a slide-illustrated lecture on the role of color in animal communication. Dr. Van Gelder will take a look at the markings and skin colors of animals from around the world, including marsupials from New Guinea, gemsbok from Africa, and porcupines of North America.

Dr. Van Gelder has been on the staff of the Museum since 1956. He is a popular author; his most recent book being *Mammals of the*

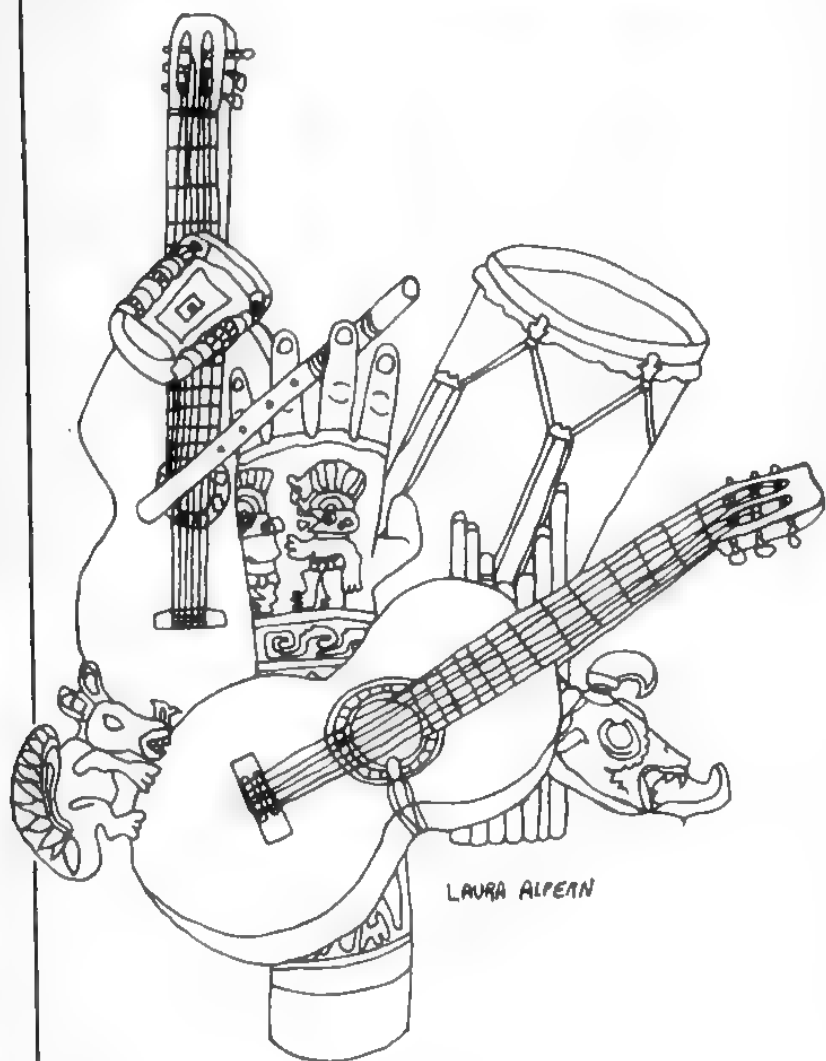
National Parks, and he has done field studies of mammals around the world.

This program was originally announced in the April issue of *Rotunda*. A limited number of tickets still remain. For further ticket information, please call (212) 873-1327.

Do the black and white markings on a skunk communicate to other animals that they should stay away?



Latin American Month



May is Latin American Month in the Leonhardt People Center. On each weekend, different folk artists from the many countries of South and Central America will demonstrate the crafts and music that make up this unique cultural heritage. The first half of the month will focus on Central America, and the second half on South America.

Included will be dance performances by the Ballet Folklórico Centro del Mexicano, the Dondines Dancers, the Spanish-American Folk Group and the Grupo Mole de Panama. Andean music by Grupo Lautaro; and numerous other lectures and demonstrations focusing on the traditional folklore and folk art of Latin America.

The programs in the Leonhardt People Center run from 1:00 to 4:30 p.m. on Saturday and Sunday afternoons. In conjunction with these programs, films and demonstrations may be scheduled in other areas of the Museum. Check the calendar (page 12) for more information.

Sponsored by the Caribbean Program of the Department of Education, the programs are free to all Museum visitors. Seating is on a first-come first-served basis.

African Diaspora in the Americas

Wednesdays, May 11 and 25
7:00 p.m. Auditorium. Free

A documentary on dancing in Cuba, another exploring the daily life in a Haitian village, and numerous other films will make up a two-day festival on the African Diaspora in the Americas. The impact of African thought and culture on the Americas is often underrated. In fact, the value systems and traditions of Africa have permeated many aspects of the lifestyle of people in the New World. This annual festival serves as a reminder to emphasize and celebrate this heritage.

Haitian Song, for example, is a lyrical portrait of life in a small village in rural Haiti. By following a man and woman through the cycle of a day, the film presents and explores the rituals that weave together to form their daily life: making rope by hand, fetching water from the river, cooking rice and beans in an outdoor kitchen. In addition, the film follows the whole community through the cycles of a week: the market on Tuesday, the cockfight on Saturday, the



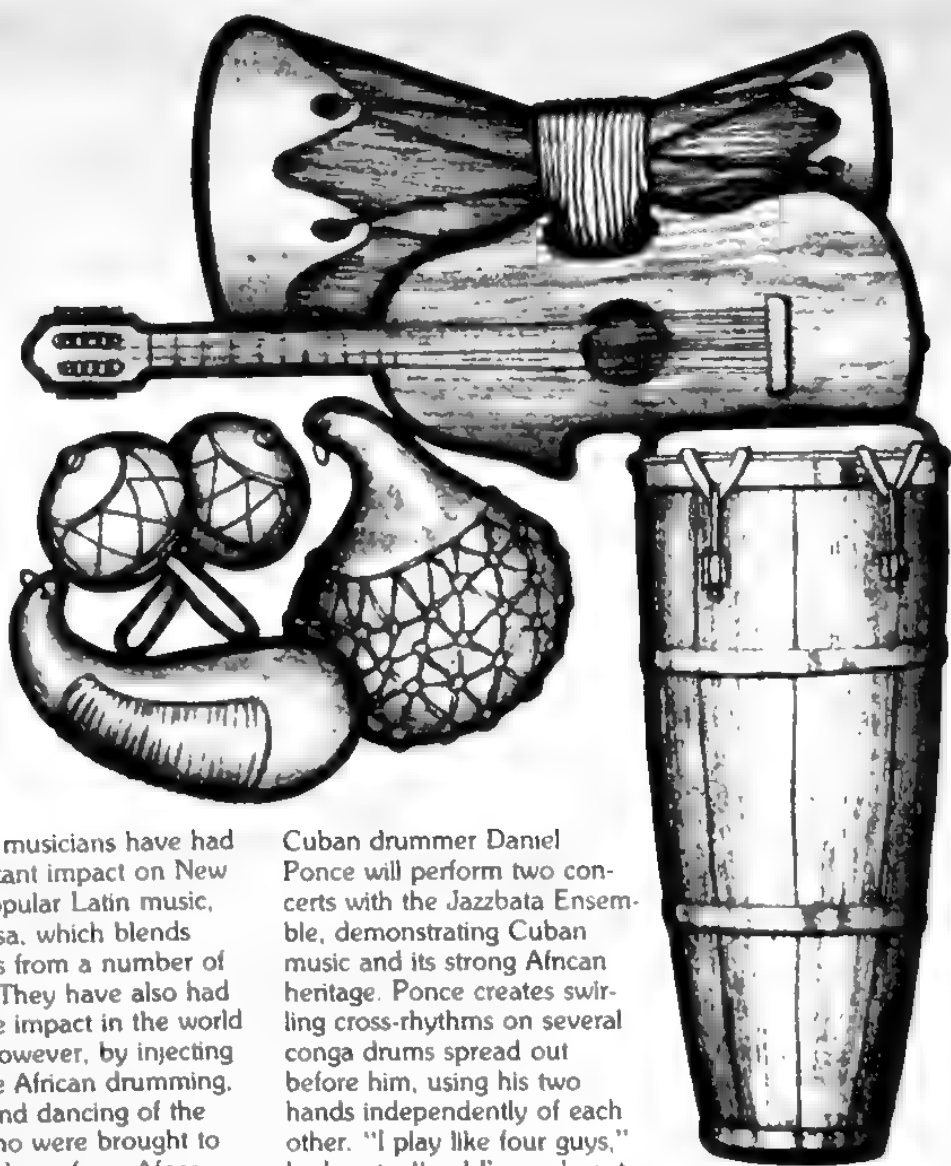
Haitian Song is part of a film festival on African influences in the Caribbean.

dance on Sunday. The film provides an authentic anthropological perspective on this Caribbean country.

The festival, sponsored by the Caribbean program of the Department of Education, will be on two Wednesdays in May, and free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are advised to arrive early to avoid disappointment.

The African Roots of Cuban Jazz

Lecture: Wednesday, June 8, 7:00 p.m. Kaufmann Theater. Free
Performance: Sat., June 11, 1:00 and 3:00 p.m. Kaufmann Theater. Free



Cuban musicians have had an important impact on New York's popular Latin music, called salsa, which blends influences from a number of cultures. They have also had a decisive impact in the world of jazz, however, by injecting into it the African drumming, singing and dancing of the slaves who were brought to the Caribbean from Africa.

On Wednesday, June 8, Dr. Isabelle Ley Marie will lecture on the origins and development of Afro-Cuban music and the effect this music has had on contemporary jazz. Dr. Ley Marie is an ethnomusicologist who has spent more than ten years researching Latin music.

On Saturday, June 11,

Cuban drummer Daniel Ponce will perform two concerts with the Jazzbata Ensemble, demonstrating Cuban music and its strong African heritage. Ponce creates swirling cross-rhythms on several conga drums spread out before him, using his two hands independently of each other. "I play like four guys," he boasts, "and I've only got two hands."

He comes from the Jesús María district of old Havana where he grew up to the sounds of drumming, particularly the sacred bata drums played for African-derived religious ceremonies. He moved to the United States in May of 1980, giving up his position of a government-salaried, profes-

sional musician to explore new musical directions.

Sponsored by the Department of Education, both the lecture and the two performances are free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are advised to arrive early to avoid disappointment.

Saludo a las Americas

Wednesday, June 1
7:30 p.m. Auditorium. Free

Each year one of the most significant group events within the Hispanic community of New York is the *Saludo a las Americas*. This traditional festival, held in conjunction with the Hispanic American Parade, is a vivid expression of the beauty, spirit and folklore of Hispanic countries. Combining the folk dances and the music from countries in Latin and South America,

as well as Spain and the Caribbean, the festival is a celebration of the common heritage of the different groups.

The presentation, sponsored by the Caribbean Program of the Department of Education, will be free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are advised to arrive early to avoid disappointment.



Up the Hudson at Sunset

Sunday, June 12, 5:00 to 8:00 p.m.
\$15.00 for Members, \$18.00 for non-members

This three-hour boat trip will take you up the Hudson River at twilight to survey the northern hemisphere's most southerly fjord. Bring your own bag supper and learn about the origins of the Palisades and other bits of geologic information, as well as the natural history of the region. Sidney S. Horenstein of the Museum's Department of Invertebrates will provide a running commentary. To order tickets use the coupon below.

Join Sidney Horenstein on a sunset journey up the Hudson River to learn about the geology and natural history of the local areas

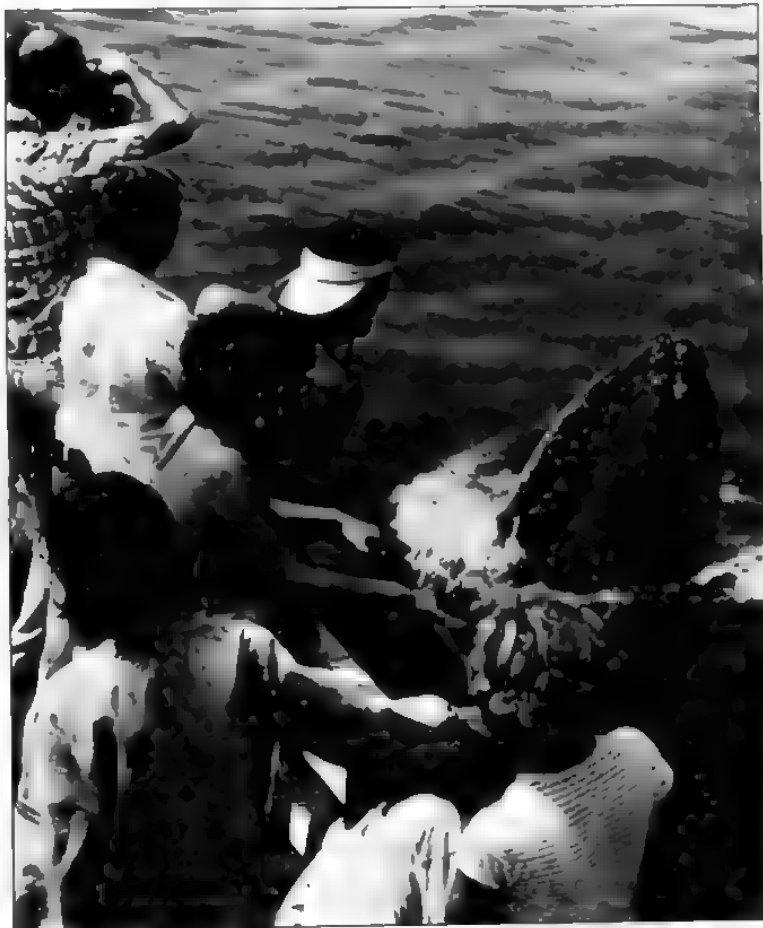


Palisades Interstate Park

Whale Watching for Young People

Saturday, June 11, 6:00 a.m. to 6:00 p.m. \$65.00
For students 14 and older, and their parents

Have you ever seen a live whale? This field trip to Montauk Point will take you out to observe whales in New York's coastal waters. The day includes a five-hour boat trip with researchers from the Okeanos Research Foundation, a private organization studying whales, dolphins and porpoises. Their research covers the animals' behavior and population distribution, and they are responsible for collecting photographic records of individual whales. Natural science instructors Sydney Buffum and Darrel Schoeling of the Museum's Department of Education will lead this study tour. To order tickets use the coupon below.



Okeanos Research Foundation

Few people get the opportunity to see real whales close up. Young people are invited to join us for this fascinating field trip.

Grupo Aymara

Wednesday, June 8, 7:30 p.m. Auditorium
\$6.00 for Members, \$8.00 for non-members

Traditional music of the Bolivian highlands is enjoying a renewed interest in South and Central America, and is finding new audiences around the world. The members of Grupo Aymara have immersed themselves in the great variety of music and instruments played by descendants of the Uru, Kolla, and Aymara people of the Bolivian highlands. Their recordings and performances of this music, as well as their original compositions, have had a significant impact on the growing appreciation of native cultural expression in the Andes. Grupo Aymara has toured Latin America and Europe, and this is their second major tour of North America. To order tickets use the coupon below.



Grupo Aymara plays the traditional music of the Bolivian highlands, drawing from the great variety of instruments and cultural traditions

A Sitar Concert with Roop Verma

Wednesday, June 15, 7:30 p.m. Auditorium
\$6.00 for Members, \$8.00 for non-members

Born in Ambala, India, Roop Verma grew up with music all around him. He is a performer, composer, teacher and musicologist, and is currently Director of the School of Music at the World Yoga University in New York. Apart from teaching at universities in the United States, Canada and India, Mr. Verma has toured extensively, performing throughout North America, Europe and India. He has been widely acclaimed by masters, gurus, critics and the public as an outstanding sitarist in the lineage of his teachers, maestros Ali Akbar Khan and Ravi Shankar. To order tickets use the coupon below.



Summer Events Coupon (See articles for prices)

	Number of Tickets	Price	Total
Grupo Aymara	x	\$	= \$
Geology at Sunset	x	\$	= \$
Sitar Concert	x	\$	= \$
Whale Watching*	x	\$	= \$
Total amount enclosed: \$			

(Only Participating, Donor and Contributing Members may take the discounted Member's Price.)

Name _____

Address _____

City _____

State _____

Zip _____

Daytime Phone _____

Membership category _____

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Summer Events, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

*Permission slips signed by a parent required for those under 18

African Textiles

By John Picton and John Mack

(Excerpted, with permission of the British Museum, from the introduction to the catalogue of the *African Textiles* exhibition.)

The most obvious use of textiles is as articles of clothing. One or more lengths of cloth may be draped around the body or tailored to make gowns, tunics, trousers and so on. Modesty, whatever that may mean to a particular people, and protection against the elements are not, however, the only purposes of clothing. Particular colours, decorative embellishments or shapes of garment may have prestige value so that the wearer of such things is immediately marked out as having great wealth or status. Alternatively, an otherwise relatively poor man may possess one costly gown which he will wear only at important occasions.

Particular colours, kinds of decoration or shapes of garment may also have significance in a political or ritual context. The tribal affiliation of a Moroccan Berber woman, for example, can be read in the pattern of stripes of her cloak. In Benin, Nigena, chiefs wear red cloth as part of their ceremonial court dress, and red by its association with anger, blood, war and fire is regarded as threatening. By the wearing of such cloth a chief protects himself, and his king, from evil, that is to say from witchcraft and from the magical forces employed by their enemies. In addition, however, some chiefs wear red cloth which is scalloped to produce a type of skirt known as 'pangolin skin'. The scales of the pangolin are widely used also as a protective charm against evil, and the pangolin is regarded as the one animal the leopard (a metaphor of kingship) cannot kill. Wearing this costume can, in addition to giving protection from evil, be interpreted as a statement of the potential opposition between the king and his chiefs, the resolution of which is so important a part of the traditional political process in Benin.

The basic colour spectrum of Africa, red, black and white, is of course, rarely without some level of meaning although the precise nature of this meaning will



A Merina man from the island of Madagascar wearing a typical Malagasy cloth.

vary from one people to another. Among the Igbirra, for example, who are also Nigerian, red is a colour associated not with danger and war, but with success and achievement (these concepts overlap but do not coincide). In Madagascar the term 'red', *mena*, is applied to burial cloths which nowadays need not even incorporate the colour red; the term is retained simply to underline their particular ritual importance.

Textiles are not only used to clothe the living, but also the dead (as in the previous Malagasy example). In addition they provide clothing for the manifestations of the world of the dead, or of some other mode of existence, in masquerade form. Here too colour is likely to be of significance and certain kinds of textile may be produced specifically for such purposes. Finally, textiles may be used to dress neither person, corpse nor spirit, but a house, to mark an event of some significance, or, similarly, a shrine.

In the absence of woven cloth, people may use barkcloth or skins. In a few places almost the only form of bodily attire is paint. Frequently textiles are worn in combination with non-textile fabrics, skins or paint. The simplest form of West African man's dress, for example, is a triangular leather apron, worn around the waist and sometimes tucked between the legs, together with a length of cloth thrown over one shoulder. Although the exhibition is about textiles rather than about costume, barkcloth, skins and body decoration are analogous to textiles in some areas and combined with them in others, so they cannot be left altogether out of any consideration of the subject.

Textiles also have an obvious economic value. Cloth is a marketable commodity and has been the subject of extensive trade within and beyond the continent of Africa. In some places one range of cloths is woven for local consumption and another, quite different, for trade with other peoples. In the sixteenth

century, cloths woven in Benin were purchased by Europeans for trade in the Gold Coast. At a later period, Yoruba cloths were purchased for trade in Brazil. Cloths have also been woven specifically for use as currency, as in Zaire; and in Sierra Leone at one time cloths of a particular size could be used for paying court fines.

In some areas, most of West Africa, Ethiopia, East Africa and Zaire, for example, all weaving is done by men. Elsewhere, Berber North Africa and Madagascar, for example, all the weaving is done by women. In other areas, such as Nigeria, Arab North Africa and the Sudan, both men and women weave. If a man weaves he may or may not be a full-time specialist; if a woman weaves it is because for that culture weaving is among the various skills expected of her. However, a type of loom used by women in one part of the continent will be used by men in another. One of the few things that can be said is that in those few cultures where both men and women weave they each use a different kind of loom.

Among the Yoruba peoples of Nigeria, the cloths manufactured by women are for immediate local consumption, by both men and women, and generally have little or no prestige value. Weaving is not the full-time speciality of any woman but is numbered among the range of domestic skills proper to them. Some men also weave but they use different looms. Moreover, men's weaving is concentrated in a few centres and the weavers are, in principle, full-time specialists. The traditional economic structure of Yorubaland was sufficiently complex and diverse to permit a wide range of craft specialities. The cloth woven by Yoruba men now has high prestige value as it presumably also had in the past and is worn as such by both men and women. Yoruba men's weaving thus thrives, but in many parts of Yorubaland women's weaving has gradually and now almost completely disappeared with the advent of imported and factory-produced cloth.



Two young women of the Ayt Brahima, one of the tribes of the Ayt Hadiddu, Morocco, wearing the cloak and headress proper to women of the tribe.



An Annang-Ibibio boy weaving raphia on an upright loom in south-east Nigeria.

The Story of Textiles

Wednesday, June 22, 7:30 p.m.
Auditorium. Free

The market places in the villages and cities of Africa are living newspapers. In the gatherings of people everyday, social, political, educational and religious events are all discussed openly or disguised through tales, and problems are resolved both humorously and seriously.

The Story of Textiles, featuring Pearl Primus and her Earth Theater, is a dramatic performance combining dance, music, drama and song. By presenting the daily life of a vendor and her family in the market place, the performance offers glimpses into the daily life of the culture. The vendor, Pearl Primus, keeps an eye on the ram-bunctious activities of her sons and daughters, and on her collection of glorious fabrics which she is selling in a West African market place. Along the way the audience observes interactions within the family, and between the family and other members of the market. Subjects range from relationships between people to the importance of cloth — its size, color, design and texture.

Pearl Primus' Earth Theater is a dynamic performing com-

pany of dancers, musicians and singers, presenting authentic and creative dances of Africa, the Caribbean and America. "My career has been a quest," says Dr. Primus, "a search for roots. The journey has taken me deep into the cultures of many people in many countries of the world. Dance is my medicine. It is the scream which eases for awhile the terrible frustration common to all human beings who, because of race, creed or color, are 'invisible.' Dance is the fist with which I fight the sickening ignorance of prejudice. It is the veiled contempt I feel for those who patronize with false smiles, handouts, empty promises, insincere compliments. Instead of growing twisted like a gnarled tree inside myself, I am able to dance out my anger and my tears."

The performance, sponsored by the African American program of the Museum's Department of Education, will be free to all Museum visitors. The seating will be on a first-come first-served basis, so Members are advised to arrive early to avoid disappointment. For more information call (212) 873-1300, ext. 514.



Dr. Pearl E. Primus

Sigrid Estrada

The Art of African Adornment

Tuesday, June 21, 7:30 p.m.
Metropolitan Museum of Art

Patterns, designs and symbols found in African textiles can also be found in other styles of adornment. Jewelry, sculpture, and hair weaving often complement a person's clothing, reflecting different levels of authority in the same way colors and patterns do in cloth. So too do scarification and body painting.

To supplement the exhibition *African Textiles* (see article page 1), Rosalind Jefferies will give a slide-illustrated lecture at the Metropolitan Museum of Art on the artistry of adornment. She will draw from exhibits in the American Museum of Natural History's *Hall of Man in Africa* and in

the Metropolitan Museum's new Rockefeller Wing of Primitive Art. Included will be woven Zulu love charms, Egyptian cloth for draping the dead, wooden objects carved with the patterns of Kuba cloth, and Ibo hair sculpture.

Rosalind Jefferies is an art historian and a consultant to both the Metropolitan Museum of Art and the American Museum of Natural History. The lecture will be held at the Metropolitan Museum of Art, and will be free to all Museum visitors. The Metropolitan requires a donation for entrance to the museum. For more information call (212) 873-1300, ext. 514.

Special Members' Opening For African Textiles

Tuesday, June 14, 5:30, 6:30, or 7:30 p.m.
Free and open only to Members and their guests

The Exhibition: *African Textiles* is the first major exhibition devoted to textiles of the entire African continent. The exhibition contains striking examples of African craftsmanship and also illustrates the technological processes used to create the fabrics. *African Textiles* marks the first time that the British Museum has ever lent an entire major exhibition from its collections to any institution abroad. The exhibition will open to the public on June 15. (See article page 1 for more details.)

Entertainment: Kimati Dinzulu and the Kotoko Society will perform traditional and contemporary African Music in the hall of African Mammals throughout the evening. The Kotoko society is an ensemble of musicians who play a wide

variety of African instruments including the mbira (finger piano), the gome (foot drum) and the abe (Ghanaian flute).

Refreshments: There will be a cash bar in the Hall of African Mammals serving wine, beer and soda.

Members' Opening for African Textiles Tues., June 14

Please indicate a first and second choice of times

5:30 p.m. 6:30 p.m. 7:30 p.m.

Number of people

Name

Address

City

State

Zip

Daytime Phone

Membership category

Please mail with a self-addressed, stamped envelope to *African Textile Reception*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Flash of Spirit: Two Lectures by Robert F. Thompson

Mondays, June 6 and 13, 7:00 p.m. Auditorium
\$12.00 for Members, \$15.00 for non-members

Dr. Robert Farris Thompson, Professor of Art History at Yale University, will give two lectures on the contributions of the great West African cultures. On **Monday, June 6**, he will focus on Yoruba *Atlantic Art and Architecture*, and on **Monday, June 13**, *Kongo Atlantic Art*. Within these subjects he will explore the rich artistic traditions that include wood carving, jewelry and textiles.

Throughout the Americas there are graves of transplanted West Africans and their descendants ringed with shells or sometimes plumbing pipe, shells being symbolic of time, and pipe of tunnels or passages to other worlds. The Yoruba word for pipe, in fact is a pun on the word for "a bridge across."

More than one third of the Blacks in North America have a heritage in West Africa. As with many transplanted cultures — the Jews or the Chinese, for example — the great West African cultures have maintained a strong sense of unity in the New World. Because of a continuous influx over two centuries of West African slaves, there was a constant reinstatement of artistic motifs and cultural

values, helping them to retain their vibrancy and meaning.

Dr. Thompson's most recent book — to be published this Fall — is *Flash of Spirit: The African Art Connection in the New World*. The lectures precede the opening of *African Textiles*, a major exhibition from the collections of the British Museum (see article page 1). Tickets for the series of two lectures may be ordered with the adjacent coupon.



AMNH

Two Lectures with R.F. Thompson

This program is offered by the Department of Education

Number of Members' tickets x \$12.00 =

Number of non-members tickets x \$15.00 =

Total amount enclosed

Name

Address

City

State

Zip

Membership category

Daytime Phone

Please mail with a self-addressed, stamped envelope to *Thompson Lectures*, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Lost in the Great Unknown

Alone, alone, all all alone
Alone on a wide, wide sea
— Rhyme of the Ancient Manner

Imagine the year 1925 and the first expedition to fly across the vast and desolate ice packs of the North Pole. Aviation was still the domain of reckless heroes — it would be two years before a postal flier named Lindbergh made his famous trans-Atlantic crossing. Imagine two arctic explorers with a simple plan: to fly to the North Pole, plant a flag, and fly out. Imagine them marooned in the shifting ice, four hundred miles from the nearest land mass, with two disabled seaplanes, no radio, and only the barest supply of rations and equipment.

For years Lincoln Ellsworth had dreamed of exploring the Arctic. He was an accomplished explorer and had recently co-led a geologic expedition in Peru. But his ambition was to fly over the North Pole and explore the great unknown basin between there and Alaska.

Roald Amundsen shared Ellsworth's ambition. He was an experienced Arctic and Antarctic explorer, and had been the first to reach the South Pole in 1911. He had made two unsuccessful attempts to fly to the North Pole in 1922 and 1923, hoping to discover whether the polar basin was another continent or an ice-covered sea.

In October of 1924, Amundsen and Ellsworth joined forces and began to prepare for a joint expedition. Because of sponsorship by the Aero Club of Norway, the expedition flew the Norwegian flag. In April of 1925, the team gathered at Spitzbergen, an island lying halfway between Norway and the North Pole. Here they assembled their planes and waited for favorable weather. They had purchased two German-designed, Italian-built, Dornier-Wal, open-cockpit seaplanes. Each carried a crew of three: a pilot, a mechanic, and a navigator/observer (Ellsworth and Amundsen). Ellsworth wrote in his diary:

May 21st is the day we have long awaited, when, with our two Dornier-Wal flying boats, we are ready to take off from the ice at King's Bay to start into the Unknown. We are carrying seventy-eight hundred pounds above the maximum lift. We are compelled to leave behind our radio equipment, which would mean an additional three hundred pounds. Our provisions are sufficient to last one month.

The two planes (N-24 and N-25) took off at 5:10 p.m., May 21, 1925. The plan was to fly to the pole, and land there to plant a flag and take soundings under the ice. They would spend the night on an ice floe and return to Spitzbergen the following day.

After eight hours of flight, rough calculations showed they were close to the Pole. A heavy wind, however, had driven them westward. Their fuel was half spent as the planes began to descend toward the nearest crack in the frozen sea that would be large enough for a landing. Ellsworth wrote:

It [the crack or "lead"] was an awful looking hole. We circled for about 10 minutes, looking for enough open water to land in. [The water] was choked up with a chaotic mass of floating ice floes, and it looked as if someone had started to dynamite the ice pack. Ice blocks standing on edge or piled high on top of one another, hummocks and pressure ridges — this was all that greeted our eyes! It was like trying to land in the Grand Canyon.

Ellsworth watched Amundsen's plane circle down, then saw the rear motor backfire and stop as N-25 disappeared among the ice hummocks.

Ellsworth's plane put down among the ice floes. He had no idea where Amundsen's plane was. When he took bearings, he found they were 120 nautical miles from the North Pole. A few hours later, with the aid of binoculars, he spotted N-25 about three miles away. Unable to reach Amundsen's plane by foot over the rugged terrain, the crew pitched a tent on an ice floe and spent their first night in the Arctic.

Amundsen's plane had come down in a narrow arm of the lead and stopped nose up against an ice-berg. The three men worked to turn the plane around before it froze in position, but they were unsuccessful. Fearing that the fissure might close up and crush the plane, they decided to move it onto the adjacent ice-berg. Amundsen writes:

When we left we had 500 kilos too much on board and had therefore to deny ourselves many things. To carry with us a number of ice tools, which we might never need, was out of the question. We had only calculated with landing on, and rising from suitable ice. No one had dreamed of the present situation. We looked at our available tools: three slip knives, one big knife, one ax, one ice-anchor which in time of need could be used as a pick. It is unbelievable what people can do when they are driven to it.

On May 23 Amundsen finally sighted Ellsworth's plane. They could communicate with flags, but were still unable to reach each other. Both crews worked feverishly to get their planes up onto an ice floe and protect them from the shifting ice. Their concern was not unfounded. By the 26th of May — after just five days of floating in the Arctic sea — the ice had shifted so much that the two planes were only a half mile apart. The crew of N-24 signalled that they would again attempt to reach N-25. With each man carrying eighty pounds, they started across a freshly frozen lead. Ellsworth writes:

Suddenly I heard Dietrichson [the pilot] yelling behind me, and before I knew what it was all about, Omdal [the mechanic] ahead of me cried out also and disappeared as though the ice beneath him had suddenly opened and swallowed him. There just happened to be some old ice beside me and that was what saved me. Lying down on my stomach, partly on this ledge of old ice, and partly out on the new ice, I reached the skis out and pulled Dietrichson over to where I could grab his pack and partly pull him out. . . . Then I turned my attention to Omdal. Only his pallid face showed above the water. The only thing that kept him from going under was the fact that he kept digging his fingers into the ice. I reached him just before he sank and held him by his pack until Dietrichson could crawl over to me. . . . It took all the remaining strength of the two of us to drag Omdal up onto the old ice.

Amundsen could not see what was happening, but heard the cries of the two men. He and his pilot took their canvas boat and met the N-24 crew, amazed that all three were still alive. Omdal and Dietrichson were soaked to the skin, but otherwise unharmed.

All six men now worked to free N-25. They lived on daily rations of hot chocolate, a soup made with dried beef and vegetables, oatmeal biscuits and malted milk balls. They crowded into the tiny plane to sleep at night, keeping warm by means of a small cooking stove. On May 28 they took two soundings. The echo from the sea bottom gave them a depth of 12,375 feet, which seemed to confirm the theory that there was no large land mass in the northern part of the Arctic Ocean.

Amundsen's plan now was to try and free one plane and return to Spitzbergen, abandoning any thought of reaching the Pole. He set June 15 as the date for a definite decision on whether to risk the treacherous walk to Greenland (400 miles away), or to stay with the plane and hope the coming summer would open enough water to allow them to take off.

During the next two weeks there were many harrowing moments, all with the constant danger that N-25 could be damaged beyond repair. Ice floes buckled and crawled on top of one another, pressure ridges surged up. The men found an area nearby on the ice pack that, with some leveling, might be large enough to form a runway. For days they hacked

away at the snow with their limited tools, trying to clear a hard track. They tramped endlessly back and forth, packing it down with their feet. Finally, on June 14, the runway was completed. They tried twice to take-off, but could not attain sufficient speed. The plane was too heavy and the snow on the track was too soft.

That evening they unloaded everything possible from the plane, keeping only enough fuel for the eight hours flying time to Spitzbergen. The runway froze hard during the night, and at 10:30 a.m. on June 15, they made another attempt. Amundsen writes:

This was undeniably a most anxious moment. One hundred meters off, we started at top speed. . . . The plane trembled and shook, shivered and piped. It was as though N-25 understood the situation. It was as though the whole of its energy had been gathered for one last and decisive spring from the floe's southern edge. Now — or never. Was it possible? Yes, indeed! The scraping noise stopped, only the humming of the motor could be heard. At last we were in flight.

Eight hours later they sighted land and brought the plane down in open water. They had less than thirty minutes fuel supply left. A passing cutter towed them to King's Bay. Ellsworth writes:

History does not record the feelings of the six men who, after drifting about in the ice for twenty-five days, returned to solid land again, subdued, saddened, and perhaps humbled by the experience. We had been taught our inconsequence, our insignificance, in the presence of the great elements.

Undaunted by the experience, however, Amundsen and Ellsworth began immediately to plan for another attempt. This time, however, they chose an Italian airship designed by Umberto Nobile. On May 11, 1926, with favorable winds and weather conditions, the blimp — christened *Norge* in recognition of the Aero Club of Norway's support again — rose from King's Bay with sixteen men aboard.

The flight of the *Norge* went smoothly. The ship carried enough rations to last the entire crew two months, including a wireless for transmitting messages. At 11:30 a.m. on Wednesday, May 12, the ship passed over the North Pole. It descended to within 300 feet of the ice, and the Norwegian, American and Italian flags were dropped. It was Lincoln Ellsworth's 46th birthday.

This was Ellsworth and Amundsen's last adventure together. On January 21, 1927 — six months after the expedition reached Alaska — the American Museum of Natural History and the American Scenic and Historic Preservation Society presented medals to both men, commemorating the first trans-Polar flight. Tragically, Roald Amundsen disappeared later that year, lost in a plane in the Arctic, while searching for the survivors of a wrecked airship on a later expedition.

Lincoln Ellsworth was elected an honorary fellow of the American Museum on November 9, 1925, and became a trustee in May of 1927. Between 1933 and 1939, he led four expeditions to the Antarctic. An exhibit commemorating these later endeavors, along with the 1925-26 polar flights, is located in an alcove off the 77th Street Lobby of the Museum, across from the Museum Shop.

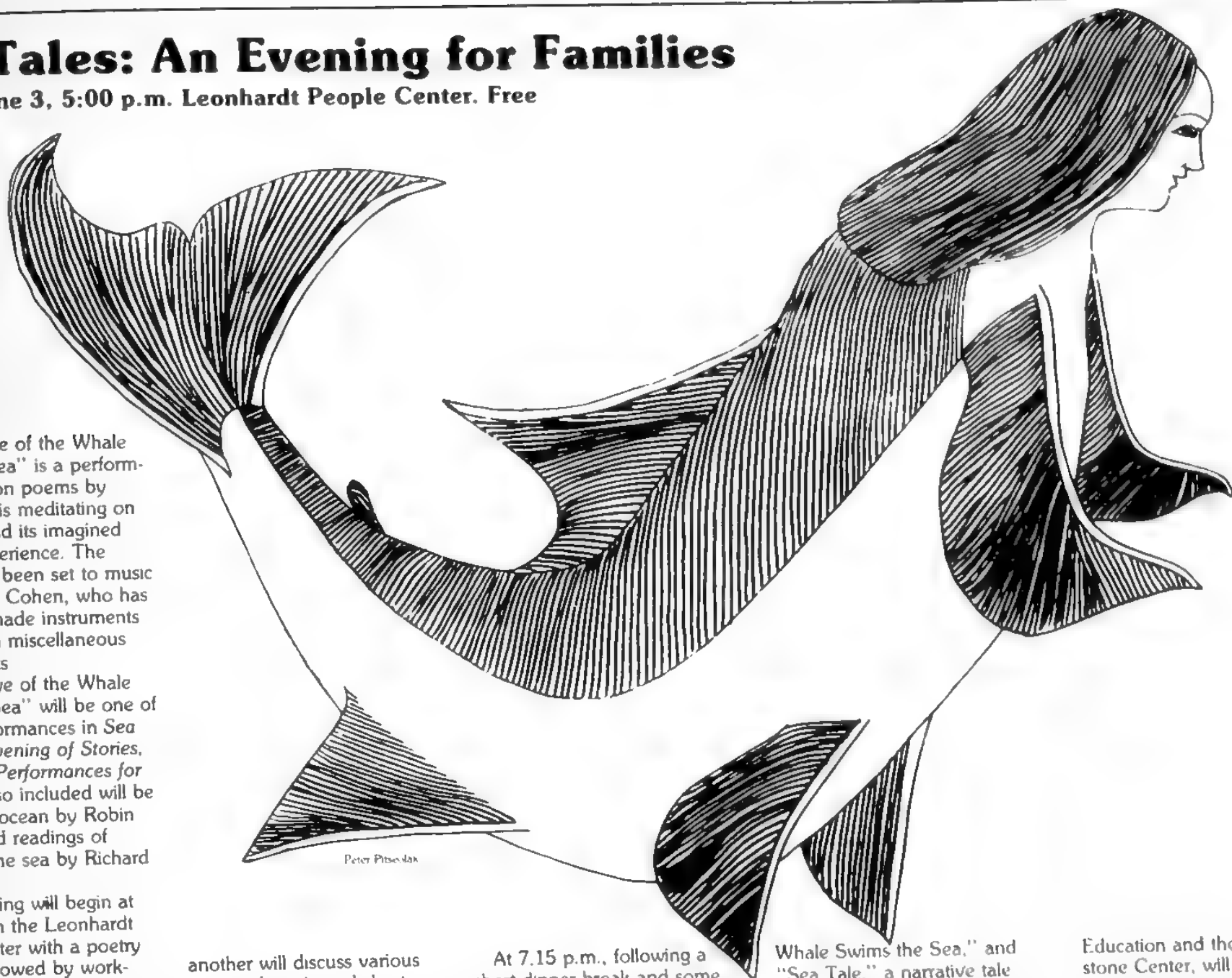
— Barbara Sawicz



400 Miles from the nearest land, the two planes drifted among the dangerously shifting ice floes while the crews struggled to lift themselves from the frozen polar sea.

Sea Tales: An Evening for Families

Friday, June 3, 5:00 p.m. Leonhardt People Center. Free



"In the Eye of the Whale Swims the Sea" is a performance based on poems by Richard Lewis meditating on the whale and its imagined sense of experience. The poems have been set to music by Alice Eve Cohen, who has used homemade instruments created from miscellaneous found objects.

"In the Eye of the Whale Swims the Sea" will be one of several performances in *Sea Tales: An Evening of Stories, Poetry and Performances for Families*. Also included will be films of the ocean by Robin Lehman and readings of poems on the sea by Richard Lewis.

The evening will begin at 5:00 p.m. in the Leonhardt People Center with a poetry reading, followed by workshops in which the audience will be able to participate. One of the workshops will create a book of poetry using the poems from the reading.

another will discuss various pieces of music and short poems on the sea, and the third will explore translating this type of poem into sign language for the deaf.

At 7:15 p.m., following a short dinner break and some films by Robin Lehman, the audience will move to the Hall of Ocean Life for performances of "In the Eye of The

Whale Swims the Sea," and "Sea Tale," a narrative tale choreographed in dance and sign language.

The program, sponsored by the Museum's Department of

Education and the Touchstone Center, will be free to all Museum visitors. Because of the limited seating, Members are advised to arrive early to avoid disappointment.

Versions of the Traditional

Wednesdays, May 4 and 11, 6:00 p.m. Linder Theater. Free

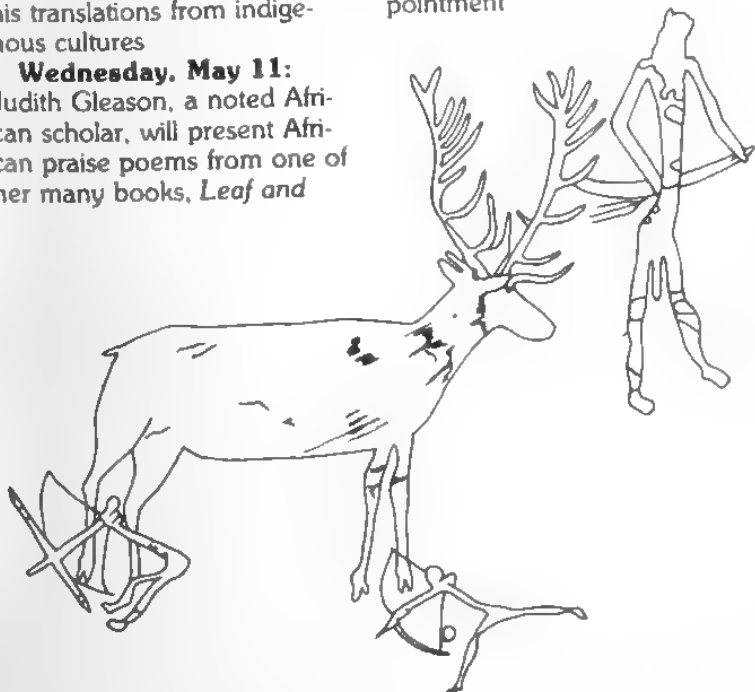
The music, myths, and poetry of various traditional cultures will be the subject of two evenings of *Versions of the Traditional*. The evenings will be introduced by Richard Lewis of the Touchstone Center.

Wednesday, May 4: Pulitzer Prize winning poet W.S. Merwin, whose works include *A Mask of Janus*, *The Compass Flower*, and *Finding the Islands*, will read and discuss his translations from indigenous cultures.

Wednesday, May 11: Judith Gleason, a noted African scholar, will present African praise poems from one of her many books, *Leaf and*

Bone. Joe Gaines, Azuka Mbanefo and John O. Ogun-dipe will supplement the reading with music, song and narratives.

These evening programs, presented by the Department of Education in cooperation with the Touchstone Center, will be free to all Museum visitors. Seating will be on a first-come first-served basis, so Members are encouraged to arrive early to avoid disappointment.



Dance in Every Land

Wednesday, May 18, 8:00 p.m. Auditorium. Free



Filipino farmers wage a perpetual struggle with the *tikling* bird, a long-legged bird that eats baby rice plants in the field. To protect their crops the farmers make traps from long pieces of bamboo and place them below the surface of the water in the rice fields. When the birds step on them the traps close on their legs. The birds, however, have learned to pull out their legs as soon as they feel the trap start to close.

The famous *Tinkling* dance of the Philippines reenacts this escape. Two people hold the ends of two long bamboo

sticks, rhythmically opening and closing the trap, as dancers, representing the birds dance in and out of them, their ankles in constant jeopardy.

This dance will be one of many presented by the Allnations Dance Company in their performance of *Joy in Everyland*, a trip through the colorful world of international dance. The company is made up of dancers, singers and musicians from all over the world who present the folklore and traditions of their native lands. The Allnations Dance Company has performed

Dancers from all over the world will perform *Joy in Everyland* with the Allnations Dance Company.

many times at the Museum. The program, sponsored by the Department of Education and the Performing Arts Foundation, Inc., will be free to all Museum visitors. Because of the company's great popularity, Members are encouraged to arrive early to avoid disappointment.

Do You Work for a Company That Matches Gifts?

A recent issue of *Rotunda* reported that almost 300 corporations believe enough in the American Museum to give unrestricted gifts each year.

A number of corporate supporters have Matching Gift programs. They will match double, or even triple the contributions of their employees to certain cultural or educational institutions, including the American Museum of Natural History. Is your company on this list?



Allied Corporation
American Express Company
American Telephone & Telegraph Co
Amstar Corporation
Armco, Inc.
Atlantic Richfield Foundation
BankAmerica Foundation
Beatrice Foods
Bloomingdale's
Bunge Corporation
Celanese Corporation
The Chase Manhattan Bank, N.A.
Chemical Bank
Citibank, N.A.
Coca Cola Company
Continental Bank Foundation
The Continental Group
The Coming Glass Works Foundation
Digital Equipment Corporation
The Equitable Life Assurance Society
Exxon Corporation
Freeport-McMoRan
Gilman Paper Company
Great Northern Nekoosa
Gulf Oil Foundation
Gulf + Western Foundation
Houston Natural Gas Corporation

International Business Machines
Johnson & Higgins
Johnson & Johnson
Kimberly-Clark Foundation
Lever Brothers Company
Mobil Foundation
Morgan Guaranty Trust Company
NCR Corporation
Pfizer Foundation, Inc.
Phelps Dodge Foundation
Philip Morris, Inc.
Quaker Oats Company***
Readers Digest
Rockefeller Brothers Fund
Rockefeller Center, Inc.
Santa Fe Industries Foundation
Sperry & Hutchinson Company
Squibb Corporation
Time Inc.
Times Mirror
Unilever United States, Inc.
Union Pacific
United Parcel Service
United Technologies
Westinghouse Electric Corporation
Xerox Corporation

Double Match Single Match

These Matching Gift programs are convincing evidence of an interest—shared by corporations and their employees—in preserving the Museum both as an outstanding center of scientific research and as the largest classroom in the world.

We hope the list of "matching" companies continues to grow (there were only a handful ten years ago). More importantly, we hope our contributors are taking advantage of existing Matching Gift programs to multiply their gifts to the Museum.



Museum Notes

Special Exhibitions

Exploring the Deep Frontier (Through May 15 in the Roosevelt Rotunda, second floor). A collection of photographs, exhibits and equipment showing people's progress in overcoming the obstacles of deep ocean exploration. Displays range from primitive diving bells to space age diving suits and submersibles. There are two companion exhibits of **Deep Ocean Photography** and the **New Frontier of Life**. The former consists of photographs of the sea floor which reveal evidence of new forms of life, extensive deposits of valuable minerals and evidence of bottom currents. The latter is a display of animal communities around deep ocean vents that do not depend on the energy of the sun.

A Flowering of Science: Plants from Captain Cook's First Voyage (1768-1771). Through July 8 in the Naturemax Gallery. Selections of the pictorial record of the flora collected by botanists on this first voyage around the world.

African Textiles. June 15 through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses, wrapping for the dead, masks, puppets and clothing.

Planetarium Events

Is Anyone Out There? The Search for Life in Space. March 3 through September 12. (See article page 3.)

Sky show times:
Weekdays: 1:30 and 3:30 p.m.
Saturday: 11 a.m., and hourly from 1:00 to 5:00 p.m.
Sunday: hourly 1:00 to 5:00 p.m.

Admission for Participating, Donor and Elected Members is \$2.25 for adults, \$1.25 for children. For non-member prices call 873-8828.

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, 2:00 to 4:30 p.m., and 1:00 to 4:00 p.m. on Saturday and Sunday. It is closed on Mondays and holidays. Summer hours (July and August) will be Tuesday through Saturday, 10:30 a.m. to 12:30 p.m. and 1:30 p.m. to 4:30 p.m. The Center is closed Sundays and Mondays for this period, and July 4.

People Center. Ethnic

programs featuring dance, music, films, lectures and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty-feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off of the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater: (212) 496-0900. Currently the films are:

To Fly!, a history of American aviation complete with barn-storming in the midwest, ballooning over Niagara Falls and hang-gliding off volcanic cliffs in Hawaii.

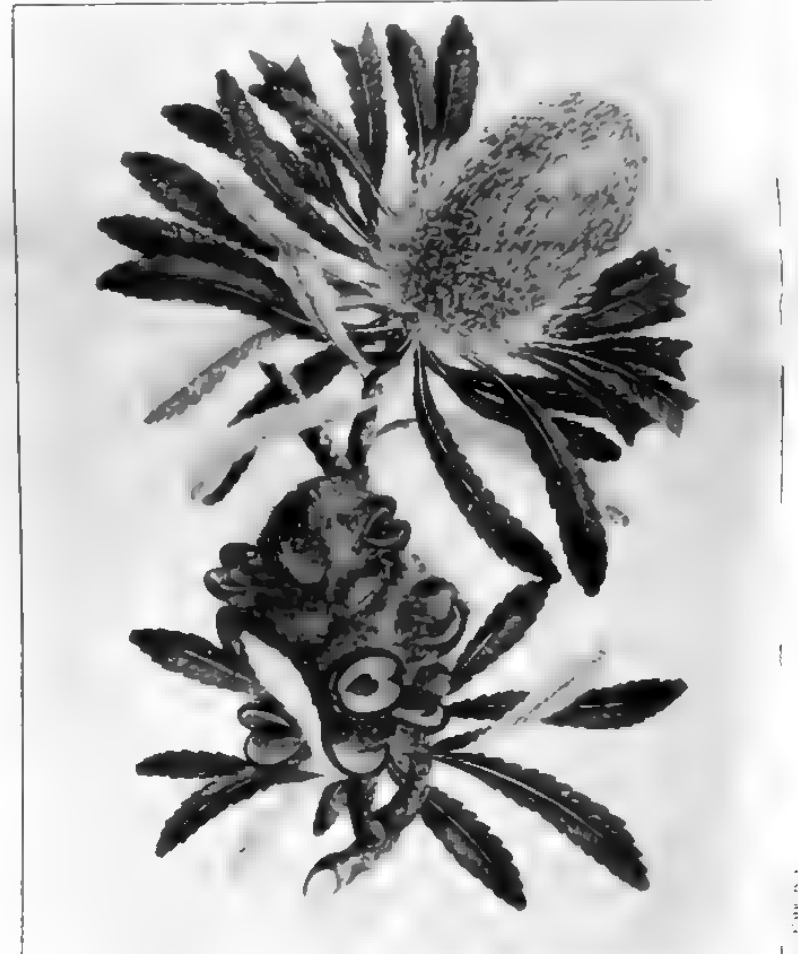
Living Planet, an overview of the evolution of life from a drop of water to the technological achievements that brought about New York City and space exploration.

Man Belongs to the Earth, an ecological study of the human impact on the fragile world we inhabit.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday:

Selections from the pictorial record kept by botanists on Captain Cook's first voyage around the world make up *A Flowering of Science* (Naturemax Gallery).



10:00 a.m. to 5:45 p.m.
Wednesday, Friday and Saturday: 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday and Saturday evenings from 5:15 to 7:00 p.m.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.

Terrace Cafe. Open daily, May through October, at 11:30 a.m. Located on the steps of the Roosevelt

entrance on Central Park West.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwestern Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Coat Checking. For your convenience the coat check room is located in the basement next to the cafeteria, and on the second floor at the main entrance. There is a 40¢ charge per item.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>For people who have always wanted to learn origami: beginning Wednesday, June 15, or Saturday, June 18, Alice Gray, Michael Shall, and Martha Landry will teach a weekly course to give people a basic understanding of origami in exchange for volunteer time working with or around this year's Holiday Tree. Participants must be 14 years or older. For more information or to register call (212) 873-1300, ext. 538</p>			<p>1 7:30 p.m. <i>Saludos a las Americas</i>. Auditorium Free. (See article page 4.)</p>		<p>3 5:00 p.m. <i>Sea Tales: An Evening of Stories, Poetry, and Performance</i>. Leonhardt People Center. Free (See article page 9.)</p> <p>Last Quarter (half moon)</p>	<p>4 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center. Free</p>
<p>5 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center. Free</p>	<p>6 7:00 p.m. <i>Yoruba Atlantic Art and Architecture</i> with Robert Farris Thompson Auditorium Tickets required (See article page 7)</p>	<p>7</p>	<p>8 7:00 p.m. <i>Analysis of Afro-Cuban Jazz</i>. Kaufmann Theater. Free. (See article page 4.)</p> <p>7:30 p.m. <i>Grupo Aymara</i> Auditorium. Tickets required (See article page 5.)</p> <p>7:30 p.m. <i>N.Y. Mineral Club</i>. Leonhardt People Center Free</p>		<p>10 2:00 p.m. <i>River Trip</i> A modern dance piece about the Grand Canyon. Free and open only to Members and their guests Kaufmann Theater For more information call (212) 873-1327 New Moon</p>	<p>11 6:00 a.m. - 6:00 p.m. <i>Whale Watching for Young People</i>. Tickets required. (See article page 5.)</p> <p>1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center Free</p> <p>1:00 and 3:00 p.m. <i>Afro-Cuban Jazz with Daniel Ponce</i>. Kaufmann Theater. (See article page 4)</p>
<p>12 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center Free</p> <p>2:00 p.m. <i>N.Y. Shell Club Room</i> 426 Free</p> <p>5:00 p.m. <i>Geology at Sunset Cruise</i> with Sidney Horenstein. Tickets required (See article page 5.)</p>	<p>13 7:00 p.m. <i>Kongo Atlantic Art</i> with Robert Farris Thompson Auditorium Tickets required (See article page 7)</p>	<p>14 11:25 a.m. <i>Wonderful Sky</i>. Special Sky Show for Preschoolers. Planetarium (See article page 3.)</p> <p>5:15 p.m. <i>Special Members' Preview of African Textiles</i> Reservations required (See article page 7.)</p>	<p>15 <i>African Textiles</i> opens in Gallery 3 (See articles pages 1, 6 and 7.)</p> <p>7:30 p.m. <i>Roop Verma Sitar Concert</i> Auditorium Tickets required. (See article page 5)</p>		<p>17 First Quarter (half moon)</p>	<p>18 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center. Free</p>
<p>19 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center. Free</p>		<p>21 Summer Solstice (Summer begins at 6:09 p.m.)</p>	<p>22 7:30 p.m. <i>The Story of Textiles</i> with the Pearl Primus Earth Theater Auditorium. Free. (See article page 7.)</p> <p>7:30 p.m. <i>Lapidary & Gem Society</i>. Leonhardt People Center Free</p>		<p>24 <i>Discovery Tour</i> For leaves for Alaska information call (212) 873-1440</p>	<p>25 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center Free</p> <p>Full Moon</p>
<p>26 1:00-4:30 p.m. <i>Native American Month</i>. Leonhardt People Center Free</p>		<p>28 8:00 p.m. <i>Met Grotto</i>. Nat'l Speleological Society Room 129 Free</p>	<p>29</p>	<p>30</p>		

June 1983 American Museum of Natural History

Sun

1 11:00 a.m., 1:30 and 3:30 p.m. Flukes and Flippers. Family Members Program. Tickets required. For information call (212) 873-1327.

8 1:00-4:30 p.m. Latin America Month. "Regional Dances of Mexico," "Transition of Huichol Yarn Painting Through History," "Traditional Mexican Pottery." Leonhardt People Center. Free.
2:00 p.m. New York Shell Club Room 426 Free.

Mon

2

3 7:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507.

Tue

9

10 7:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507.

Wed

4 6:00 p.m. Versions of the Traditional. Under Theater. Free. (See page 9.)
7:00 p.m. Sontaria: Practitioner and Psychological Perspectives. Kaufmann Theater.
7:30 p.m. The Unspoken Language of Color. Tickets required. (See page 3.)
8:00 p.m. Amateur Astronomers Association. Room 426. Last Quarter (half moon)

Thu

5 9:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507
2:00 p.m. Aquatic Plants in the Web of Life. Gallery Talk with H. Schiller. Assemble at first floor Information Desk. Free.
7:00 p.m. Systemics Discussion Group. Room 419. Free.

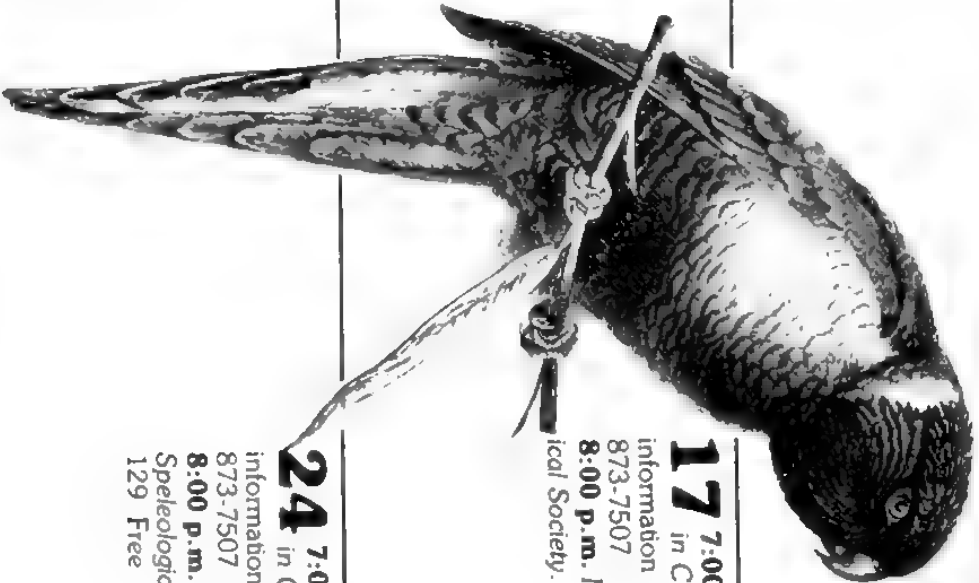
Fri

7 11:00 a.m. New York Map Society. Room 129. Free
1:00-4:30 p.m. Latin America Month. "Regional Dances of Mexico," "Transition of Huichol Yarn Painting Through History," "Traditional Mexican Pottery." Leonhardt People Center. Free.
1:00-4:00 p.m. Latin American Films. Kaufmann Theater. Free.

14 1:00-4:30 p.m. Latin America Month. "Traditional Dances of Panama," "Brazilian Indian Feather Work: Styles and Cultural Significance," "Argentinean Wood Carving." Leonhardt People Center. Free

New Moon

15 Last day to view Exploring The Deep Frontier, Deep Ocean Photography, and New Frontier of Life
1:00-4:30 p.m. Latin America Month. "Traditional Dances of Panama," "Brazilian Indian Feather Work: Styles and Cultural Significance," "Argentinean Wood Carving." Leonhardt People Center. Free.
2:00 p.m. N.Y. Paleontological Society. Room 426. Free



17 7:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507
8:00 p.m. N.Y. Entomological Society. Room 319. Free.

18 7:00 p.m. The Black West. Kaufmann Theater. Free. (See article page 2.)
8:00 p.m. The All Nations Dance Company. Auditorium. Free. (See article page 9.)

19 9:00 a.m. Bird Walk in Central Park. For info call (212) 873-7507.
11:25 a.m. Wonderful Sky. Special Sky Show for Preschoolers. Planetarium. (See article page 3.)
2:00 p.m. Reptiles and Amphibians. Gallery Talk with J. Munoz. Assemble at first floor Information Desk. Free
First Quarter (half moon)

24 7:00 a.m. Bird Walk in Central Park For information call (212) 873-7507
8:00 p.m. Mei Grotto: Nat'l Speleological Society Room 129 Free

25 7:00 p.m. African Diaspora in the Americas. Auditorium. Free. (See article page 4.)
7:30 p.m. Lapidary and Gem Society. Leonhardt People Center. Free.

26 9:00 a.m. Bird Walk in Central Park. For info call (212) 873-7507
2:00 p.m. Witchcraft, Sorcery, and Social Control. Gallery Talk with P. Santagon (interpreted for the hearing impaired.) Assemble at first floor Information Desk. Free
Full Moon
Discovery Tour leaves for China. Call (212) 873-1440

29 1:00-4:30 p.m. Latin America Month. "Dances of the Andes," "Traditional Chilean Weaving Techniques," "Ecuadorian Indigenous Cultures." Leonhardt People Center. Free
1:00-4:00 p.m. Latin American Films. Kaufmann Theater. Free

30 Memorial Day (Museum open)

The **June 1983** calendar is on page 11 of this issue



28 1:00-4:30 p.m. Latin America Month. "Dances of the Andes," "Traditional Chilean Weaving Techniques," "Ecuadorian Indigenous Cultures." Leonhardt People Center. Free.

May 1983
American Museum of Natural History

DOTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol. 7, No. 6 July/August 1983

BBC Film Festival

An outstanding selection of natural history films from the British Broadcasting Corporation offers Members the chance to travel the world to explore the wonders of nature

Page 3

Celebration of Birds

Louis Agassiz Fuertes is considered one of the greatest natural history artists of all time. Even his field sketches from expeditions show his distinctive ability to bring animals - particularly birds - to life with his brushes. Many of his paintings and field sketches make up the exhibit *Celebration of Birds: Louis Agassiz Fuertes and His Art*

Pages 4 and 5

American Museum Restaurant

We are happy to announce the opening of our new restaurant providing a bright, comfortable place for you to bring your family and friends and enjoy a sit-down meal

Page 6

Exploring for Young People

Explore the myriad life forms in a drop of water, compare human skulls with those of our primate relatives, or learn about the natural world through special workshops we are offering this summer to Members ages 9-14

Page 6

An Evening in Asia

Tuesday, August 16. Open only to Members and their guests
\$2.00 for adults, \$1.00 for children. 6:00 to 9:00 p.m.

Would you like to go to Asia this summer? Members and their guests of all ages are invited to *An Evening in Asia* as we open up several of our halls after hours and bring down special pieces from the collections. Museum scientists will be on hand to discuss the collections and their research and to answer any questions you might have.

Learn how and why the Chinese bound the feet of little girls, see a demonstration of Asian shadow figures, play the Korean stick game *yut*, and take a tour of Asian reptiles with the Museum Highlights Tour leaders. There will be representatives of the

wonderful fish, insects, reptiles, and amphibians that inspired such awe and mystery in the early explorers. Come to feel the fur of a Siberian tiger and handle the horn of a rhinoceros. Learn about the robber crab that climbs trees to eat coconuts and about the giant clam that legend says devoured divers.

You can have your name written in Chinese, practice the art of Asian *ongami*, draw masks from Tibet, or win prizes on our spectacular treasure hunt through Asia. You can even decorate an elephant for a Hindu ceremony. In addition there will be a film program in the Auditorium that will be repeated throughout the evening. This

Come laugh and learn, wonder and wander, as we open the Museum after hours for a Members' Evening in Asia

will include archival footage from the great Museum expeditions to Asia.

Tickets for the evening are \$2.00 for adults, \$1.00 for children. Advance reservations are required. Take advantage of this mid-August spectacular in the Hall of Asian Peoples. To order tickets, use the coupon on page 2.



Lee B. Jinn/AMNH

Margaret Mead Film Festival

Monday through Thursday, September 12 through 15

Last year more than 8,000 people attended the Margaret Mead Film Festival, an annual event screening anthropological films from all reaches of the world. The festival attempts both to encourage documentation of the world's fragile and vanishing cultures through film and to bring these films into the public view. These two principles were pioneered by the late anthropologist Dr. Margaret Mead.

This year's Margaret Mead Film Festival will be held on four consecutive evenings, Monday through Thursday, September 12 through 15. Four separate screening areas will show over forty films, more than half of which are New York premieres. All films will be introduced and discussed by leading anthropologists and filmmakers, many by

the filmmakers themselves. The festival is free to Members and Museum visitors, but seating is limited and on a first-come, first-served basis.

A complete program for the festival will be included as a special supplement to the September issue of ROTUNDA. Here is a brief sampling of some of the films.

First Contact, Bob Connolly and Robin Anderson. In the 1930s, when gold was discovered in the interior of New Guinea, an entire population was found inhabiting the cool inland valleys. Cut off from the rest of New Guinea by hitherto impenetrable mountains, these people thought their world was the only one that existed. The film documents this extraordinary meeting of two cultures, the isolated people's

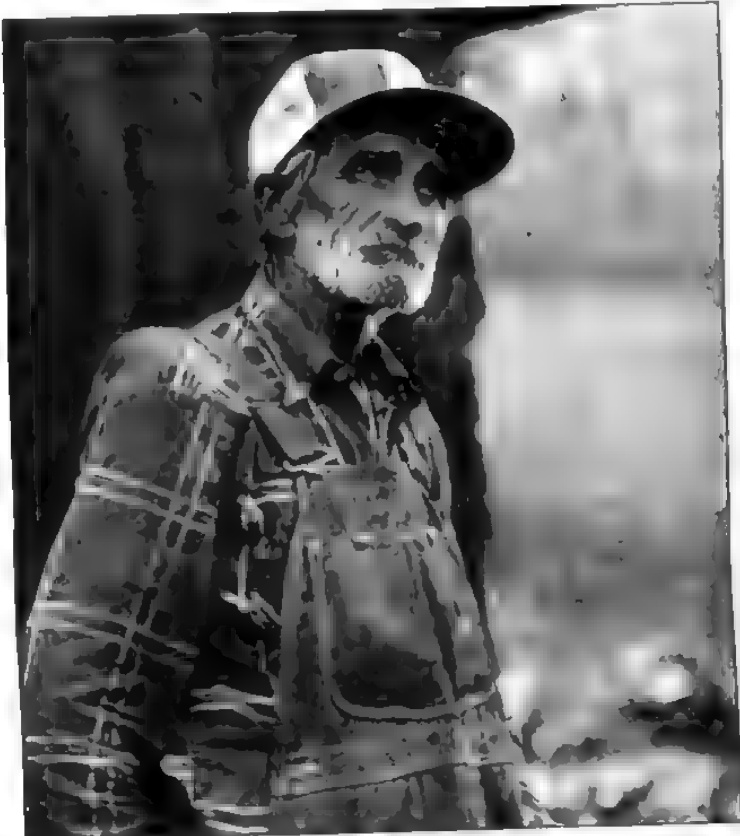
awe and wonder at the beginning, and their gradual realization that these strangers were only human.

El Niño Fidencio, Nicholas Echevarria. El Niño Fidencio, who died in 1938, was famous throughout Mexico as a great healer. As many as 50,000 people went to him to be cured, including a former president of Mexico. El Niño developed several clinics, including one for lepers and another for patients with mental problems. He performed surgery, reputedly using pieces of broken glass or whatever else was at hand. After El Niño died, several sects arose claiming to use his spirit in the healing process. The film, while presenting biographical information on El Niño, focuses on these sects and explores the phenomenon of faith healing.

The Navigators, Sanford Low. More and more archeological evidence indicates that the Polynesians were extraordinary seafarers, crisscrossing the vast reaches of the Pacific Ocean 3,000 years before Columbus sailed the Atlantic. These navigators, aiming for a single island no more than a mile wide across great expanses of empty ocean, understood not only such natural indicators as stars and ocean currents but also mystic "sea signs" that guided them when more obvious indicators were obscured. The central character, Mau, is considered by many to be the last of these great navigators. He says he participated in the film — making a voyage from Hawaii to Tahiti using only the old traditions — both as an effort to inspire young people to continue the traditions and as a permanent record of what his people had achieved.

Heaven on Earth: Pilgrimages to the Ganges, 1957-1977, Pierre Amado. In 1977 some 10.5 million people took their holy bath in the Ganges River at Prayag in less than twenty hours. Hindus consider it a special blessing to die in the holy city of Varanasi on the Ganges, and the ashes of dead relatives are often brought there to be placed in the holy river. By surveying pilgrimages to the Ganges over twenty years, this film shows how religious traditions are still alive in India today, despite extensive modernization. We see what changes the traditions have undergone, and how the most sophisticated modern techniques have been used in organizing the largest congregation of people in the world.

Other films in the Festival explore the immigrant experience in the United States, Australian aborigines, North American Indians, Africa, South America, and Greece. A complete program will be included as a special supplement to the September issue of Rotunda. For more information call (212) 873-1070.



This year's Margaret Mead Film Festival will present forty-nine anthropological and ethnographic films including (top) Shannon County, which draws upon personal vignettes to document daily life in a remote county in the Ozark Mountains of southern Missouri, and (bottom) So Far from India, which explores the complex reunion of an Indian man who lives in New York and his wife and child still living in India.

Members' Memo

Come See Us This Summer

New Naturemax Benefit

I am pleased to announce that beginning this July, Members will receive a 50 percent discount at all Naturemax films. To receive the discount, present your Membership card at the 77th Street Membership Desk, right next to the Naturemax ticketing booth. Participating, Donor, and Contributing members are entitled to six discounted admissions as often as they wish to attend. Associate Members are entitled to one. Of course you can still use your complimentary Naturemax tickets, which will be good until the end of the year. If you have not received them, you can pick them up at the 77th Street Membership Desk before the film. Next year we will offer the discount alone.

Naturemax has certainly added an exciting new dimension to the Museum experience. Almost half a million people have left breathless from the largest indoor film phenomenon in the area. We are now previewing some spectacular new films, and we hope to introduce a new one to you later this year. We also hope to arrange Members' previews and special Members' evenings at Naturemax. We appreciate all the enthusiastic comments we receive from our Members about Naturemax. Now, with the new discount benefit, you will be able to bring your friends and family to Naturemax whenever you visit the Museum.

Summer at the Museum

A number of people ask us whether anything happens at the Museum during the summer. We don't believe that everyone leaves town from June to September, so we do offer a number of activities. This summer is an especially busy one.

African Textiles is our major exhibition now, and weekend programs throughout the month of July will explore various aspects of African culture. We are also opening three temporary exhibits: one of paintings and field sketches by the renowned artist-naturalist Louis Agassiz Fuertes; another of the winning photographs from the *Natural History* photo competition; and *South of Winter*, a photographic essay about the wildlife on the coast of the southern United States.

As for programs, we are offering two days of magnificent natural history films made by the BBC; an *Evening in Asia*; and a series of exploration days for young people. All of these programs and exhibits are described in greater detail in this issue.

The summer is also an ideal time to take advantage of our air-conditioned halls of Asian Peoples, Minerals and Gems, and others. The Naturemax Theater is air-conditioned, too. Don't forget to visit our new *American Museum Restaurant*. Members' comments and requests for a sit-down restaurant were a major reason for its creation. We hope you will take advantage of it and send us your comments.

Have a good summer, and we hope to see you here.

Henry H. Schubert

An Evening in Asia. Tuesday, August 16. The program is open only to Members and their guests. Tickets are \$2.00 for adults and \$1.00 for children.

Number of children tickets	_____ X \$1.00	\$ _____
Number of adult tickets	_____ X \$2.00	\$ _____
Total amount enclosed		\$ _____

Please indicate a first and second choice if possible
I would prefer to arrive between _____ 6:00 and 6:30 p.m.
_____ 7:00 and 7:30 p.m.

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Daytime Phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *An Evening in Asia*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

BBC Natural History Films

Tuesday evenings, July 19 and 26, 5:30 p.m. and 7:30 p.m. Auditorium
Free and open only to Members and their guests



Ostrich photographed by Barrett Gallagher/Animale Animals

For more than twenty-five years, the BBC Natural History Film Unit has been producing some of the world's most outstanding nature films. These visually striking films explore the complex relationships of plants and animals, often bringing to light little-known aspects of the natural world.

Members are invited to join us this summer for a BBC Natural History Film Festival in the Museum's air-conditioned Auditorium. The festival will include four films narrated by David Attenborough from the BBC's highly acclaimed "Wildlife on One" series, which attracts up to fifteen million British viewers each week. The program is free and open only to Members and their guests. **Your Membership card is your ticket of admission.** Participating, Donor, and Contributing Members are entitled to six free admissions. Associate Members are entitled to one. All others are \$2.00 each.

Tuesday, July 19

The Impossible Bird (25 minutes): The haughty-looking ostrich stands nine feet tall and lays eggs the size of a softball. It is incapable of flying, but can run at the astounding speed of forty miles per hour. This film takes a rare and fascinating look at this "impossible" bird's social behavior, from its odd mating habits to the unique way it raises its young.

Tree of Thorns (50 minutes): The umbrellalike "tree of thorns" supports a wealth of African wildlife. This unusual and beautiful film captures the delicate harmony of a woodland community and the natural forces that threaten its survival.

Tuesday, July 26

Flower from the Flames (25 minutes): This film provides a remarkable view of the winter-flowering protea, named after Proteus, the Greek god who could change his form. The Cape sugar bird is mysteriously drawn to the protea's

spectacular appearance, and as many as eight beetles will fight with each other to enter its blossom. One variety of protea lives in the ground, opening only at night, and it was just recently that scientists discovered which nocturnal animal pollinates it.

Ambush at Masai Mara (25 minutes): Each year the dramatic confrontation between migrating wildebeests and the majestic lions of Kenya provides an incomparable spectacle. This film depicts the events that occur during a day at the height of the migration, as they might be seen from a lion's perspective.

Waterwalkers (25 minutes): Enter the world of pondskaters, swamp spiders, whirligigs, and other miniature inhabitants found on the surface of ponds and streams. This strikingly photographed film reveals a world where the laws of physics take on new dimensions: where water bends, and surface tension can mean the difference between life and death.

Saunters at Sunset

Members are invited to join Sidney Horenstein this summer for one of his sunset tours of the urban landscape. On each tour, Mr. Horenstein will describe New York's myriad building stones, discuss the geologic forces that shaped the metropolitan area, and point out the plants and animals that inhabit our urban terrain. All the tours will begin at 6:00 p.m. and end at locations that offer spectacular views of New York's sunsets. To register please use the adjacent coupon.

Brooklyn Heights: Brooklyn Heights contains a great variety of buildings constructed from the late eighteenth century to the present time. Mr. Horenstein will use the different buildings to illustrate the changes that have taken place in building technology and materials over the last 200 years. The tour will end with views of the New York harbor, and Mr. Horenstein will explain how the harbor, the heights, and

Manhattan were all formed.

Gracie Mansion to

Grant's Tomb: This tour begins with a look at a geologic fault that cuts across Manhattan, and ends with beautiful views of the Palisades. By the time the tour is completed, Members will have traversed Manhattan at its widest point, inspected terracotta apartment buildings and limestone townhouses, and explored the landscaped wilds of Central Park.

Battery Park and Lower

Manhattan: This tour will follow the original shoreline of lower Manhattan. Mr. Horenstein will describe what the island looked like 300 years ago and what has been added over the years. The tour will conclude in Battery Park, where Members will inspect 350-million-year-old fossils embedded in the base of one of the park's monuments and explore Castle Clinton, a building that has served as a fort, auditorium, immigration station, and aquarium.

Sunset Tours. These tours are open only to Participating, Donor, and Contributing Members and their guests. Please sign up for one tour only and indicate a first and second choice (if possible). Your confirmation card will have the starting point for the tours.

Brooklyn Heights Monday, July 25, at 6:00 p.m.

Gracie Mansion to Grant's Tomb Wednesday, July 27, at 6:00 p.m.

Lower Manhattan Thursday, July 28, at 6:00 p.m.

Number of People:

I have enclosed my check for \$ (\$5.00 per person)

Name:

Address:

City:

State:

Zip:

Daytime Phone:

Membership category:

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Sunset Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

ROTUNDA

ISSN 0194-6110

Vol. 7, No. 6

July/August 1983

Henry H. Schulson — Manager of Membership Services

Stanton G. Orser — Editor

Angela Soccodato — Designer

Rita Campon — Copy Editor

Alan P. Ternes — Editorial Advisor

Kate Bennett-Mendez — Editorial Advisor

Kim Hamilton — Editorial Assistant

Marion Halberg — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Tel. (212) 873-1327. © 1983 American Museum of Natural History. Second-class postage paid at New York, NY.

141

Printed by Waldon Press, Inc., New York

African Textiles

Gallery 3 through December 4

African Textiles is the most comprehensive exhibition on this subject ever assembled. For Africans, textiles are a major art form, an aesthetic expression intimately linked to daily life and to ritual. In the exhibition we see not only how techniques and textiles vary from one region and one ethnic group to another but also how cloth is used as an expression of personality and individuality. There is a Muslim shirt with Arabic inscriptions and magic squares hand-drawn all over it (the owner literally wearing his prayers on his back), and a hunter's appliqué shirt covered with leather, shell, and twine talismans. There is a wonderful multicolored patchwork coat of armor, made for a Sudanese horse, and a large appliqué textile made to be worn by a house, signifying that its owner has died.

Basically all weaving involves interlacing two sets of threads at right angles. While looms certainly make the process easier, they are not essential: in some cultures, people simply weave on their fingers. In weaving, threads going in one direction are pulled taut (the warp), while

the other set of threads (the weft) are interlaced over and under the warp threads. Usually a device called a heddle is used to separate the warp into alternately raised and depressed rows, opening a space through which the weft can be more easily passed.

John Mack and John Picton, the curators of the original *African Textiles* exhibition (held at the British Museum's Museum of Mankind), have conducted an extensive analysis of African weaving and have discovered that all African looms, with the exception of the tablet loom used in a few parts of North Africa, can be classified into two types: single-heddle and double-heddle.

A single-heddle loom has one heddle device that lifts every other yarn, opening a space through which to pass the weft. But when the weft returns, it must pass over the same threads it just passed under. A wedge of some sort can be run through the warp yarns and left there, lifting the opposite yarns from the heddle. When the heddle device is relaxed, the threads that were lifted by the heddle fall back past the others. The



Senior members of the Oshugbo secret society at Ijebu-Igbo in southern Yorubaland, Nigeria. Their cloths represent the variety of weaving styles and patterns in Yorubaland.

"overs" then become the "unders." A double-heddle loom, as the name implies, simplifies this process by manipulating both sets of alternate threads. Using foot pedals, the "overs" and "unders" can be reversed with great speed, and both hands are free to move the weft.

In West Africa these two types of weaving are associated with men and women, respectively. In Nigeria only women use the single-heddle loom while only men use the double-heddle loom. One explanation for this may be that the double-heddle loom

is usually stretched out over a long distance and therefore is always done in a public space outside the home. The woman's single-heddle loom is set up against a wall, usually inside the house. Women are therefore able to weave while carrying on their domestic activities. Women may be professional weavers just like men, but they inevitably have many other domestic chores to attend to simultaneously.

In the exhibition, seven African looms are set up. While they all look quite different, all of them fall into one or the other of these types.

Except that double-heddle weaving is in narrow strips, one cannot distinguish single from double-heddle cloth by looking at the weaving itself. A wide range of patterns — from simple plain weaves to complex textures and designs — are created on both kinds of loom. This exhibition displays a dazzling variety of weaving patterns and possibilities. One comes away with the impression that there can not possibly be any kind of weaving that has not been thought of in Africa.

— Enid Schildkrout

A Celebration of Fuertes

Naturemax Gallery
August 4 through
October 2



Red Breasted Merganser/Fuertes

Before the advent of color photography, the major natural history expeditions included a field artist among their personnel. When animals, particularly birds, are collected, colors fade or change as part of the decomposition process. To accurately record an animal's features, a field artist had to sketch it immediately.

What made Louis Agassiz Fuertes such a great field artist was his vast knowledge of birds. Instead of making a sketch of a dead, expressionless bird, Fuertes was able to use his knowledge of birds —

their gestures, mannerisms, and "personalities" — to create a representation of the bird as it had lived.

A Celebration of Birds Louis Agassiz Fuertes and His Art will feature some of Fuertes's exquisite bird paintings, as well as paintings of mammals and insects made during expeditions to Africa and the Americas. Also featured will be works by other natural history artists who influenced or were influenced by Fuertes, including John James Audubon, Ernest Thompson Seton, and Roger Tory Peterson.

The exhibit is free.

South of Winter

Birds of the World, July 27 through November 30



Steven C. Wilson and Karen C. Hayden

The great blue heron is one of many magnificent birds that inhabit the marshes of the southern United States.

When a bird flies south for the winter, where does it go? Many whooping cranes, herons, spoonbills, and other birds head for the Gulf coast of Texas to the shoreline, marshlands, and lagoons that are also popular for their oil and natural gas beds.

South of Winter is a photographic exhibit of this coastal wildlife and its relationship with the industrial rigs. Many of the photographs, taken by Steven C. Wilson and Karen C. Hayden, show how these two worlds are learning to cohabitate at the Aransas

National Wildlife Refuge (where whooping cranes from the Canadian wilderness spend their winters) and Padre Island Seashore. The exhibit, made possible by a grant from Conoco, will be free to all Museum visitors. It will continue on a national tour.

Paying Homage to the Singular Beauty of Birds

The late Dr. Frank M. Chapman, long-time chairman and curator in the Museum's Department of Ornithology, offered this tribute in his eulogy of the great natural history artist Louis Agassiz Fuertes: "If the birds of the world had met to select a human being who could best express to mankind the beauty and charm of their forms, their songs, their rhythmic flight, their manners for the heart's delight, they would unquestionably have chosen Louis Fuertes."

While Fuertes painted many animals over the course of his thirty-year career, his love was depicting the subtle beauty of birds. It was not only his extraordinary sense of detail and accuracy that brought him his fame but also, as Chapman once said, "a remarkable ability to produce facial expressions which could be worn only by living birds." His careful scrutiny of his subjects, both alive and dead, enabled him to re-create a bird's personality using merely a study skin and to bring it back to life on the page as no artist had done before.

Born on February 7, 1874, Fuertes developed an early interest in painting birds and was particularly influenced by Audubon's famous folios, *The Birds of America*. Fuertes described these as "the most potent influence that was ever exerted upon my youthful longings to do justice to the singular beauty of birds."

In 1894, as a sophomore in college, he met Dr. Elliott Coues, a prominent American ornithologist of the day. Coues recognized Fuertes's talent and commissioned him to illustrate a children's book called *Citizen Bird*.

In 1896 Fuertes attended a meeting of the American Ornithologist's Union, where the drawings and paintings he exhibited launched his career. Members of the AOU, including Dr. Frank Chapman of the American Museum, were impressed enough with the young artist's work that he rapidly acquired friends, advice, and commissions. He began to study with the well-known artist Abbott Thayer, an exacting naturalist. Under his tutelage, Fuertes's style softened, losing the stylization that had come from Audubon's influence.

By the late 1890s he was well established as a natural history illustrator. In 1899 Coues, pleased with the success of *Citizen Bird*, commissioned Fuertes to illustrate his *Key to North American Birds*. Also in 1899, Fuertes was invited on his first major expedition, the Harriman Expedition to Alaska. This huge undertaking (the financier Edward Henry Harriman's "summer cruise under doctor's orders," on which he invited the best and the brightest of the scientific world) included such naturalists as John Muir and John Burroughs. The expedition covered more than 4,000 miles of the northwest coastline in two months, discovering more than 13 genera and 600 species. Even many of the known species were new to Fuertes, however, and he greeted the experience with the same exuberance and wonder that were beginning to characterize his art. He wrote in a letter home:

The blowing and snorting of the whales, the screaming, way out on the bay, of gulls and loons, and an occasional goose, and, near by, the licking of the little waves in the pebbles and hum of a big bee, with just a thin "ray" of the hermit's song way over across the bay in the spruces, make the part of the picture that you see with your ears. The other part goes beyond my vocabulary, which has gradually become dwindled down to "Wow" and "Gee".

By this time, Frank Chapman had undertaken the creation of the Hall of North American Birds at the American Museum. He was keenly aware of the educational and historic lessons that the dioramas would preserve. Chapman had worked several times professionally with Fuertes, particularly with illustrations for his magazine *Bird-Lore*. He knew that the accuracy and lifelike quality of Fuertes's work would greatly enhance the habitats, providing perhaps the only permanent record of many vanished species. To impress others with the value of these accurate reproductions, he wrote:

Would we not hold as priceless today a habitat group of Passenger Pigeons with a background by Audubon depicting a flight of these birds, a phenomenon unsurpassed in the world of birds and of which no authentic portrayal exists? Should we not then ask the Audubon of [our] day to place upon our walls records of birds that will follow the Pigeons just as he himself will follow his great predecessor?

In 1902 Chapman asked Fuertes to accompany him on a Museum expedition to the Bahamas to study the nesting habits of the flamingo in the wild. Although Chapman contracted measles and had to return to Nassau to recuperate, Fuertes continued to explore the islands with the British ornithologist J. Lewis Bonhote, encountering a great variety of seabirds. They photographed a huge flamingo nesting colony, but were too early for the actual breeding season. It was from studies he made there, however, that Fuertes created the large flamingo mural now in the Hall of North American Birds.

Suitably impressed with Fuertes's dedication, Chapman asked the young artist if he was willing to accompany him again. Fuertes wrote back, "I was born with the itching foot, and the sight of a map or even a timetable is enough to stir me all up inside." Through the next decade the two of them logged more than 60,000 miles together on Museum expeditions, collecting specimens and amassing field notes for the construction of the hall's habitat groups. Chapman would sit patiently for hours under his umbrella blind amidst hundreds of nesting birds that paid him no heed while he took pictures and made notes on their behavior. Fuertes spent long days collecting and preparing bird specimens, often painting well into the night. Back in New York, his field sketches were worked into background murals by artists on the Museum staff, with Fuertes himself working on some of the final paintings.

Their travels together included trips to Mexico, Saskatchewan and Alberta, Cuthbert Rookery in southern Florida, the western United States, and two trips to Colombia, the last in 1913. Chapman wrote of Fuertes's total concentration in the field:

Color, pattern, form, contour, minute details of structure, all are absorbed and assimilated so completely that they become part of himself, and they can be reproduced at any future time with amazing accuracy.

Fuertes's auditory sense was as fully developed as his vision and memory for detail. An authority on bird songs, he could imitate them readily, often using this talent to attract birds for observation. He wrote a series of papers for Chapman on "Impressions of the Voices of Tropical Birds," published in *Bird-Lore*.

During the war years, Fuertes continued to produce illustrations for Chapman. They occasionally disagreed on a pose or detail, and Fuertes was not reluctant to defend his work when he was sure of it. In response to one criticism Fuertes said:

The hawk is all right. I have watched practically all genera shown, and all do as I have shown . . . i.e. carry the prey at almost leg-length and slightly back . . . This I am as sure of as that they use their wings in flying, and repeatedly observed it. In all cases I have ever seen of a hawk or eagle carrying prey it has always been carried well away from the body.

Chapman was forced to concede, although there were times when Fuertes reworked a painting to gain clarity or emphasis. Each had great respect for the other's knowledge.

In 1927 Fuertes made his last and most exciting expedition to Abyssinia (now Ethiopia) with the Field Museum of Natural History in Chicago. Shortly after his return, he and his wife drove to the Chapmans' in upstate New York to show them the Abyssinian paintings. Chapman was very excited and considered the work from this trip to be among Fuertes's finest. Driving back to Ithaca that weekend, Fuertes's car was struck by a train at a railroad crossing. The car was destroyed, Louis Fuertes was killed instantly, and his wife was badly injured. The Abyssinian paintings were somehow thrown clear of both the car and the train and escaped serious damage.

Shortly after Fuertes's death, Chapman purchased a selection of his work for the Museum, representing a cross section of subjects and styles and including field studies as well as finished paintings. The Museum owns 403 of Fuertes's originals, some of which are included in the exhibition *A Celebration of Birds: The Life and Art of Louis Agassiz Fuertes* (see article page 4).

— Barbara Sawicz



Hawk/Fuertes



Muskrat fisher/Fuertes



House Sparrow/Fuertes

Weekends in Africa

Weekends in July. Leonhardt People Center. Free

Throughout the month of July, programs celebrating African cultural traditions will be held on weekends in the Leonhardt People Center (note: there will be no programs over the July 4 weekend)

On July 9 and 10, lectures and demonstrations will explore African textile technology and design, these programs supplement the African Textile exhibition currently on display in Gallery 3 (see article page 4). On July 16 and 17 lecturers will discuss sub-Saharan African traditions, focusing on the history of Ghana from precolonial times to the present, and the many uses of the calabash gourd. On July 23 and 24, storytellers

and griots (oral historians) will present some of the African oral traditions. On July 30 and 31 storytellers and lecturers will explore the African traditions in America with Br'er Rabbit stories, discussions of African-American quilting, and slide lectures on the continuing tradition of comrowing. In addition films will be shown each weekend that pertain to the specific programs in the Leonhardt People Center.

Two special programs of music and dance will round out the month. On Sunday, July 17, at 1:00 and 3:00 p.m., the Drum and Spirit Society will present "Voice of the Ancestors" in the Kaufmann Theater. On Saturday,

July 30, at 1:00 and 3:00 p.m., Kimati Dinizulu will perform a variety of African and Afro-American music in the Kaufmann Theater.

All of the African Month programs, presented by the African-American program of the Department of Education, will be free to all Museum visitors. Seating will be on a first-come, first-served basis, so Members are advised to arrive early to avoid disappointment.

These incised bowls made from calabash gourds come from Nigeria. The varied uses of gourds in Africa is the subject of one of many weekend programs on African traditions and customs.



A New Museum Restaurant

For years, Members have expressed their desire for a proper restaurant in the Museum. The cafeteria caters to those in a hurry or who want just a snack, but until now there has been no place where you could bring your family and friends for a sit-down lunch or early dinner.

The Museum has now designed a restaurant that will be competitive with the best in the neighborhood. We are pleased to announce the opening of the American Museum Restaurant.

Nestled into a sunny, interior courtyard, the addition is mostly glass and has healthy plants both inside and out. This, with the natural-colored wood décor, gives the room a

bright and cheerful atmosphere. The furniture is comfortable, the layout spacious, the portions large, and the quality good. Prices range from a hamburger or plain omelet for about \$5.00 to scallops and strips of chicken breast with lemon sauce in a pastry shell for about \$9.00. The menu is nicely varied — including cold striped bass with julienned vegetables, brie and country ham on a croissant, tortellini primavera, eggs benedict, and a variety of omelets — and prices average about \$6.50. A children's menu is available for those ten years old or younger, and offers a choice of entrée, potato chips, a hot fudge sundae, and a drink for \$3.35.

The best deal on the menu is the ice cream, which the ROTUNDA editorial board has sampled extensively and found to be excellent (particularly the coconut sherbet, which is light and sweet with chunks of real coconut — perfect on a hot day).

The American Museum Restaurant is open every day from 11:30 to 3:00 p.m. Afternoon tea and dessert are served from 3:00 to 5:00 p.m., and dinner from 5:30 to 7:30 on Wednesdays, Fridays, and Saturdays. **Members will receive a 10% discount (excluding alcohol) by presenting their Membership card.** Reservations can be made by calling (212) 873-1300, ext. 669.

Exploring on a Summer's Day

Free and open only to Members



Members ages 9 through 14 years old are invited to join us this summer for a special series of exploration days. Each workshop will focus on a different area of the natural world and include tours of the halls, hands-on work with the collections, laboratory investigations, and perhaps a field trip. These workshops will be led by Sidney Buffum and Darrel Schoeling of the Museum's Department of Education. To register please use the coupon below.

Sea Creatures: Spend a morning under the blue whale and learn how fish, mammals, reptiles, and birds have adapted to their aquatic environment. Then dissect a fish.

Drops of Life: Explore the myriad life forms in a drop of pond water. Venture out on a collecting trip to Belvedere Lake in Central Park, then return in the afternoon to look at your finds under a microscope.

Human Origins: Learn about your roots. Compare human skulls, both past and present, with those of our primate relatives. Learn how to use early human artifacts.

Urban Insects: Discover

the wonders of earth's most successful creatures. Collect them in Central Park and investigate them back at the Museum. The program will include simple inquiries into animal behavior.

Adventures in Flight:

Compare the wings of birds, bats, flying insects, and prehistoric fliers. Then learn the principles of flight by making your own kite.

Dinosaur Times: Become

a paleontologist for the day. Learn all about the giant reptiles of the past and their present-day descendants. Make a fossil rubbing and create your own fossil.

Ocean Worlds: Handle a shark's tooth, touch a narwhal's tusk, learn which marine mammal uses a tool, and study periwinkle behavior in this workshop in the Hall of Ocean Life.

World of Mammals: Take a trip to Africa and across North America and learn about the ways that elephants, cheetahs, beavers, and bears have adapted to their environments. Make a set of animal tracks and play a wide variety of games in the Museum's famous mammal halls.

Exploration Days. These workshops are open only to Participating, Donor, and Contributing Members of the Museum. Please sign up for one workshop and indicate a first and second choice (if possible).

Ages 12 to 14

Sea Creatures. Mon., Aug. 1, 9:30 a.m. to 12:30 p.m.
Life in a Pond. Tues., Aug. 2, 10:30 a.m. to 4:00 p.m.
Human Origins. Wed., Aug. 3, 9:30 a.m. to 12:30 p.m.
Urban Insects. Thurs., Aug. 4, 10:30 a.m. to 4:00 p.m.

Number of People: _____

Ages 9 to 11

Ocean Worlds. Tues., August 9, 1:00–4:00 p.m.
Dinosaur Times. Thurs., August 11, 1:00–4:00 p.m.
World of Mammals. Tues., August 23, 1:00–4:00 p.m.
Adventures in Flight. Thurs., August 25, 1:00–4:00 p.m.

Number of People: _____

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to Exploration Days, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Peruvian Folklore Spectacular

Thursday, July 21, 7:30 p.m. Auditorium. Free

The dance and music of Peru from Incan times to the present will come to the Museum this summer. *Los Takis del Peru* (*takis* means "dancer" in Quecha, the official language of the Incan empire) will present a *Peruvian Folklore Spectacular*, tracing the roots and modifications of these traditions, including the influences of Europe and Africa over the ages. Among the highlights will be the ritualistic "Virgenes del Sol," the warriors "Pokras," the "Camaval de Cuzco," and "Condor Pasa" ("Flight of the Condor").

For twenty years, *Los Takis del Peru* have brought the tra-

ditional culture and folklore of Peru to the general public. Under the direction of Mrs. Isabel Torres, who has been awarded the title of Folklorista Peruana by the Ministerio de Educacion in Peru, they have appeared at the Latino-American World's Fair, the United Nations, and many folk festivals, and schools throughout the country.

Presented by the Caribbean program of the Department of Education, the performances will be free to all Museum visitors. Because seating will be on a first-come, first-served basis, Members are advised to arrive early to avoid disappointment.



Los Takis del Peru

Museum Notes

Special Exhibitions

A Flowering of Science: Plants from Captain Cook's First Voyage (1768-1771). Through July 8 in the Naturemax Gallery. Selections of the pictorial record of the flora collected by botanists on Cook's first voyage around the world.

South of Winter. July 27 through November 30 in the Birds of the World Hall. A photographic exhibition of works by Steven C. Wilson and Karen C. Hayden. These photographs of the coastal wildlife of the southern United States begin a national tour here. (See article page 4.)

A Celebration of Birds: Louis Agassiz Fuertes and His Art. August 4 through October 2. Naturemax Gallery. This exhibition of the great field artist's work will feature paintings of birds, mammals, and insects made during expeditions to Central America, South America, and Africa. (See articles pages 4 and 5.)

Natural History Photo Contest Winners. August 24 through October 31. Center Gallery. These fifteen photographs, featured in the June 1983 issue of *Natural History*, were selected by a panel of judges as this year's winners.

African Textiles. Through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses, wrapping for the dead, masks, puppets, and clothing.

Planetarium Events

Is Anyone Out There? The Search for Life in Space. Through September 12.

Do alien cultures exist?

What are the odds? Philosophers and scientists have recorded their speculations since the fifth century b.c. *Is Anyone Out There?* considers the history of this speculation and explores its validity. Because of certain requirements for organic life to survive, not all stars would make good suns: some are too hot, some too cool, and some blow up. Not all have orbiting planets, yet given the extraordinary number of possibilities, there is a great temptation to let the imagination run wild. Included in the show are some old conceptions of moon men and Martians, as well as the discoveries that finally dispelled our notions of them. There is also a discussion of what quasars might be telling us, and how we should communicate with aliens, since they might not learn English as readily as E.T.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.

Saturday: 11 a.m., and hourly from 1:00 to 4:00 p.m.

Sunday: hourly 1:00 to 4:00 p.m.

Admission for Participating Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-Member prices call 873-8828

Programs and Tours

Museum Highlights

Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands

in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Saturday, 10:30 a.m. to 12:30 p.m., and 1:30 p.m. to 4:30 p.m. The Center is closed Sundays and Mondays.

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m. Closed for the month of August.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater (212) 496-0900. Currently the films are:

To Fly!, a history of American aviation complete with barnstorming in the Midwest, ballooning over Niagara Falls, and hanggliding off volcanic cliffs in Hawaii

The fifteen prizewinning photographs from this year's Natural History Photo Competition will be on display from August 24 through October 31 in the Center Gallery. This picture of a little girl at an amusement park won first prize in The Human Family. The photographer was Seth L. Mayer



Seth L. Mayer

Living Planet, an overview of the evolution of life from a drop of water to the technological achievements that gave rise to New York City and space exploration

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday, and Saturday evenings from 5:15 to 7:00 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the cafeteria in the basement.

Museum Parking Lot. Located on 81st Street. Open

Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$5.50 for cars, \$6.50 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays 3:30-7:00 p.m. Saturdays and Sundays noon-5:00 p.m.

Terrace Cafe. Open daily, May through October, from 11:30 a.m. to 4:30 p.m. Located on the steps of the Roosevelt entrance on Central Park.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Sun Mon Tue Wed Thu Fri Sat

July 1983

3 Last Quarter
(half moon)

4 Independence Day
(Museum open)

5

1

2

10 1:00-4:30 p.m. *Africa Month* African Textile Design Techniques, with Selina Ahoklu, African Weaving, with Man Morris, and Stories Behind African Textiles. Leonhardt People Center. Free
5:00-8:00 p.m. *Up the Hudson at Sunset* \$15.00 for Members \$18.00 for non-members. Call (212) 873-7507

11

12

17 1:00 and 3:00 p.m. *Drum and Spirit of African Society* in music, dance, and song. Kaufmann Theater. Free
1:00-4:30 p.m. *Africa Month* Sub-Saharan African Traditions — Ghana Today and Yesterday, Making and Playing the Shakere, Kofi Nkromah Koto African Music Ensemble. Leonhardt People Center. Free

18

19 5:30 p.m. and 7:30 p.m. *BBC Natural History Film Festival*. Members' Evening Program. Free and open only to Members and their guests. (See article page 3.)
8:00 p.m. *Linnaean Society*. Linder Theater. Free

24 1:00-4:30 p.m. *Africa Month* Oral Traditions — African Proverbs with Quassia Tukufu, Traditional Folk Tales of Africa, with musical accompaniment by Amadoma Bediako and Kofi Koto, and Griot and Master of Kora Music, with Djimo Kouyate. Leonhardt People Center. Free.

Full Moon

25

26 5:30 p.m. and 7:30 p.m. *BBC Natural History Film Festival*. Members' Evening Program. Free and open only to Members and their guests. (See article page 3.)
8:00 p.m. *Met Grotto*. National Speleological Society. Room 129. Free

27 *South of Winter* opens today. Birds of the World Hall. (See article page 4.)

28

29 *Discovery Tour* leaves for Scandinavian Cruise. For more information call (212) 873-1440.

30 1:00 and 3:00 p.m. *Kiriat Dinizulu and His Kotoko Society* — a performance of music from old and new Africa. Kaufmann Theater. Free
1:00-4:30 p.m. *Africa Month* African Retentions in the Americas — The Quilting Tradition, with Carmen Lowe; Br'er Rabbit Stories with Pam Patrick and Bill Tuck, and Cornrowing — Heritage of a Hairstyle, with Quassia Tukufu

31 1:00-4:30 p.m. *Africa Month* African Retentions in the Americas — The Quilting Tradition, with Carmen Lowe, Br'er Rabbit Stories, with Pam Patrick and Bill Tuck, and Cornrowing — Heritage of a Hairstyle, with Quassia Tukufu. Leonhardt People Center. Free

August 1983

1 Last Quarter
(half moon)

2

3

4 *A Celebration of Birds: Louis Agassiz Fuertes and His Art* opens today. Naturemax Gallery. (See articles pages 4 and 5.)

5

6

7

8 New Moon

9

10

11

12 *Discovery Tour* leaves for China and Tibet. For more information call (212) 873-1440.

13

14

15 First Quarter
(half moon)

16 6:00-9:00 p.m. *An Evening in Asia*. \$2.00 for adults \$1.00 for children. Open only to Members and their guests. (See article page 1.)

17

18

21

22

23 Full Moon

24 *Natural History Photo Competition Winners* opens today. Center Gallery

28

29

30

31 Last Quarter
(half moon)



Hostin/Fuertes

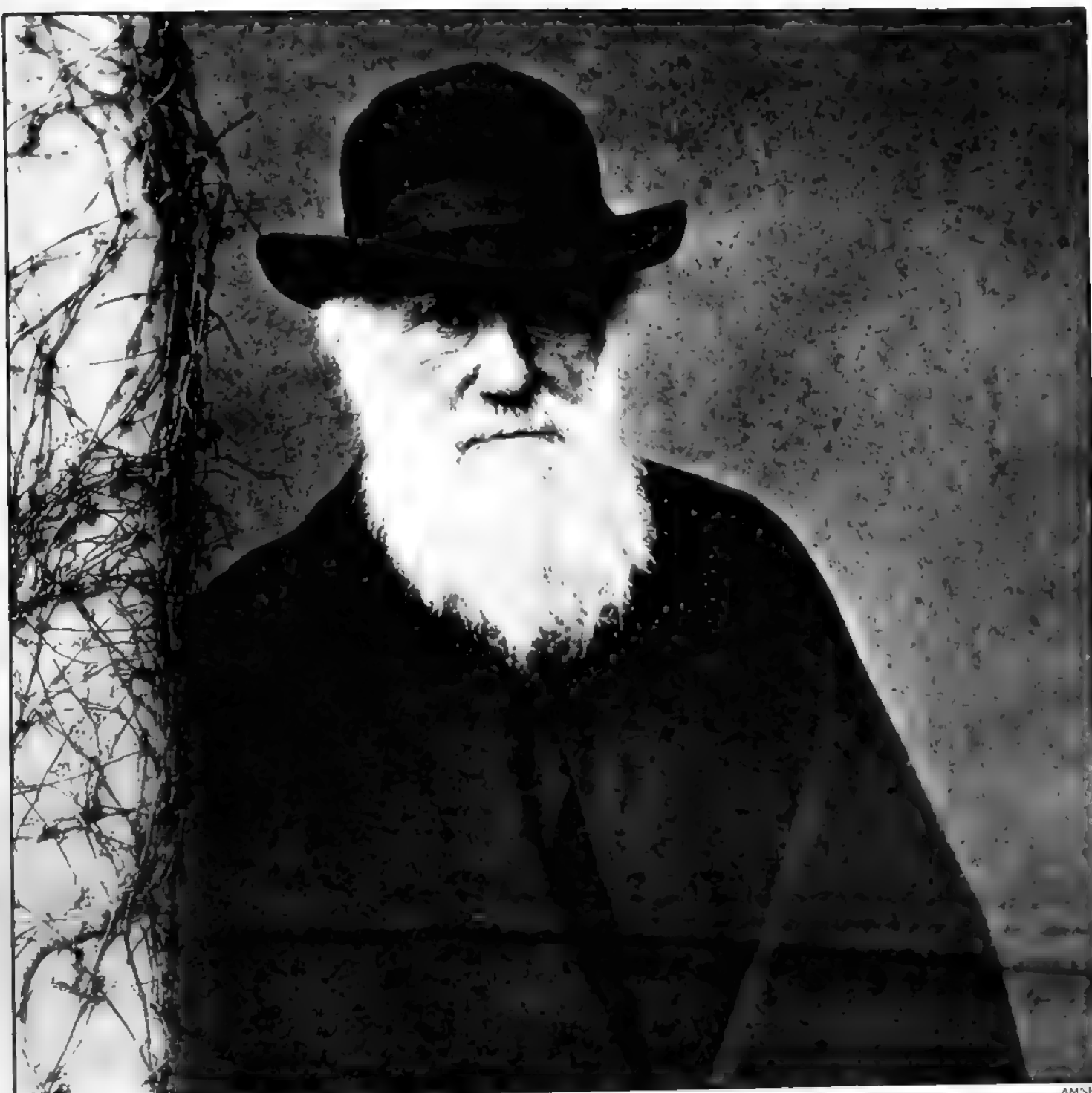


Swanisons Hawk/Fuertes

American Museum of Natural History

ROTUNDA

For Participating, Donor, and Elected Members of the American Museum of Natural History Vol 8, No 8 October 1983



The Evolution Revolution

Monday, October 17 and Tuesday, October 18, 7:00 p.m. Auditorium.
\$11.00 for Members, \$12.00 for non-members

In 1859, biologist Charles Darwin published *The Origin of Species*, a book based on his experiences aboard the *Beagle* and his subsequent studies. The book offered the first substantiated evidence of the gradual evolution of life on Earth, and proposed a theory concerning the mechanism of evolution: the theory of natural selection. The book had a profound impact not only on the history of science, but on humankind as a whole, beginning one of the most profound intellectual revolutions in history.

Dr. Ernst Mayr, distinguished Professor of Zoology at Harvard University and former curator in the Museum's Department of Ornithology, will present a pair of lectures on Darwin and evolution as part of the Department of Education's Fall Afternoon and Evening Lecture Series. In the first lecture he will explore how the Darwinian revolution changed the way people looked not only at the biological world, but at society and human nature as well. He will point out that

what people call "Darwin's Theory of Evolution" is really several separate theories about the observed fact of evolution. Using five of these theories in particular, he will discuss how they differ from popular notions of Darwinism, and how they are the foundation of current evolutionary biology. In the second lecture he will discuss evolution since Darwin, showing how the numerous attempts since 1859 to refute Darwin have been unsuccessful. He will explain several of the new ideas and current directions that have modified and broadened our understanding of evolution as a process, but will show that even they have not displaced the basic Darwinian framework of evolutionary biology.

Dr. Mayr is one of the world's leading scientists in the field of systematics and evolutionary biology. The author of several books including *Systematics and the Origin of Species* and *The Growth of Biological Thought*, he is well known for redefining the concept of a species from two things that look

Charles Darwin's "Theory of Evolution" revolutionized the world of science. Evolution from Darwin to the present is the subject of a lecture series with Dr. Ernst Mayr.

different or live in different places, to two things that cannot reproduce together.

The lectures are Monday and Tuesday, October 17 and 18, at 7:00 p.m. Tickets are \$11.00 for Members, \$12.00 for non-members.

Other lecture series offered this fall include *Magic, Witchcraft, and Sorcery*, *How the Earth Works*, *Audubon Fuentes*, and *Jaques: Extraordinary Natural History Artists*, and *Animal Life in Northeastern United States*. For more information, or for tickets to Dr. Ernst Mayr's lectures, please call (212) 873-7507.

Liking Lizards and Snakes

Members are invited on a behind-the-scenes tour of the Department of Herpetology to meet Museum scientists and discuss with them their research on subjects ranging from poison dart frogs to species of unisexual lizards.

Page 3

Good for What Ails You

Curealls offered by a doctor were just one part of a travelling medicine show. Also included were string bands, comedians, and anything else that might entertain people.

Page 3

Ancient Goddess of Womanhood

Inanna, queen of heaven and earth to the cultures of Sumer and Babylon, embodies all the aspects of womanhood. Her story was inscribed into clay tablets more than 4000 years ago, and is now told in its entirety for the first time since then.

Page 10

Caribbean Month

Weekends in October bring the Caribbean to the Leonhardt People Center. Programs of dance, music and crafts will feature specific geographical areas each week.

Page 10

Forever Wild

Wednesday, November 30, 7:30 p.m. Auditorium
\$3.00 for Members, \$6.00 for non-members

The Adirondack Council



North of Albany, in the heart of New York State, lies a tract of preserved parkland larger than the combined acreage of Yellowstone, Grand Canyon, Yosemite, Olympic, Great Smokey Mountains, and Glacier National Parks. This magnificent preserve includes marshes and lakes, swamps and bogs, forests and meadows, and mile after mile of wilderness rivers and streams. Fifty species of mammals ranging from weasels and mink to beavers and bears make this their home, as do hundreds of species of birds, fish, amphibians, and reptiles.

In 1892 the New York Legislature created the Adirondack Park, combining both public and private lands in the region, to preserve the area and protect the various watersheds for the future. In 1894 the voters of New York State amended the state constitution to insure that the Adirondack Forest Preserve, consisting of all state-owned lands in the park, "will be forever kept as wild forest lands." Despite continuing popular support for the park, however, the Adirondacks are still an area many have heard of but few have seen.

Members are invited to hear Dr. Anne LaBastille, author, naturalist, and one of the professional guides of the Adirondack region, as she discusses this glorious park.

The ecology of the Adirondack Park, as well as current perils that threaten it, are the subject of a special Members' Evening Program

Using magnificent color slides, she will present an overview of the region, discussing the history of the park, its varied environments and ecologies, and the people who live there throughout the year. She will also show how the park stands as one of the most significant examples of foresight and management in the preservation of large tracts of wilderness, despite its proximity to dense urban areas.

In addition she will point out many dangers facing the region now. Of these, acid rain and other chemical deposition are the most serious. This chemical leprosy has already "killed" many lakes in the region, and evidence points to it for the sorrowful blight hitting trees and shrubs. Other problems are the lemming-like run for upstate summer homes, and the heavy use of snowmobiles in wilderness areas.

The program is presented in cooperation with the Adirondack Council. To order tickets please use the adjacent coupon.

The Adirondacks, Wednesday, November 30
Participating, Donor and Contributing Members are entitled to six tickets at the Members' price of \$3.00. Associate Members are entitled to one. All other tickets are \$6.00.

Number of Members' tickets	X \$3.00	\$
Number of additional tickets	X \$6.00	\$
Total amount enclosed:		\$

Name _____

Address _____

City: _____ State: _____ Zip: _____

Membership category _____

Daytime Phone _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: **The Adirondacks, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024**

Audubon Film Festival

Wednesday Evenings, October 5 and 12, 7:00 p.m. Auditorium. Free

The Audubon International Environmental Film Festival was initiated in 1981 to honor fine films addressing environmental issues. The public screenings here at the Museum will present a selection of the winners in the six different categories of the festival.

Highlighting the screening on Wednesday, October 5, is *The Fragile Mountain* (55 minutes). This film, the winner in the Conservation/Ecology category, describes the lives of the mountain people of Nepal and their struggle to survive the monsoon rains that sweep whole mountainsides away, flood valleys, and threaten the lives of millions of people. In *Our Own Backyard: The First Love Canal* (60 minutes), the best of the Pollution category, is an account of the events that took place at Love Canal from 1978 to 1980. The third film of the evening is *Old House, New House* (27 minutes), winner in the Energy category, about a ninety year old house updated with energy-saving ideas.

The following Wednesday, October 12, will feature the winner in the Children's Films category, *The Park That Kids Built* (19 minutes), about a neighborhood park which was organized by a group of children, and *Dark Circles* (82 minutes), a portrait of the nuclear age which won in the Global Issues category. High-



lighting this evening is the winner in the Nature/Wildlife category, *Lights, Action, Africa!* (55 minutes) in which African wildlife filmmakers Joan and Alan Root have captured the high excitement and danger involved in filming animals in the wild.

The screenings are free and

From Lights, Action, Africa! by Joan and Alan Root, Wednesday, October 12

open to all Museum visitors. For more information please call (212) 873-1300, ext. 559.

Happenings at the Hayden

Mysteries, Muppets, and Lasers

Cosmic Mysteries

Do UFOs present evidence of visitors from the stars? Does a monstrous black hole lie at the center of our Milky Way galaxy? Could the extinction of the dinosaurs and other forms of life millions of years ago have been caused by a giant meteorite? *Cosmic Mysteries*, the Hayden Planetarium's new skyshow (through November 20), explores these and other fascinating questions. Participating, Donor, and Contributing Members receive a 25% discount on all sky show admissions. For schedules and prices call (212) 873-8828.

Wonderful Sky

Big Bird, Cookie Monster, Grover, Oscar the Grouch, Bert, Ernie, and The Count are all part of a new show for preschool children beginning this month. *Wonderful Sky* is intended as a first experience for children three through six years of age, and is designed to give them an awareness and appreciation of things they can look for in the day and night sky. A teacher-host in the center of the Sky Theater will greet the children and

soon be joined by images of their favorite Sesame Street Muppets. Together, through words, songs, and audience participation, they explore many of the wonders of the day and night sky! *Wonderful Sky* is a new program especially created for the American Museum-Hayden Planetarium, and is a joint production of the Planetarium, Jim Henson Associates (creators of the Muppets), and the Children's Television Workshop (creators of Sesame Street). It was tested briefly as a pilot by the Planetarium last spring, and shows at that time sold out quickly. Advance reservations are advised to avoid disappointment. For more information call (212) 873-5714.

The Laser Show

The music of Pink Floyd, a specially installed Fostex sound system, and dazzling new state-of-the-art laser visuals combine to create an all new experience in the laser light and rock shows. Show times are Friday and Saturday at 7:30, 9:00, and 10:30 p.m. Participating, Donor, and Contributing Members receive a 25% discount on all admissions. In addition, groups of

25 or more can buy tickets at a special rate. For more information call (212) 724-8700.



Children's Television Workshop

Snake Oil Salves and Kickapoo, Too

Thursday, October 6, 7:30 p.m. Auditorium
Free to Members, \$3.00 for non-members
(Your Membership Card is Your Ticket of Admission.)

From the crowd-gathering ballyhoo of a string band, through the doctor's pitch for his curative tonic, to the final farcical afterpiece, medicine shows were a source of lively entertainment for countless Americans in decades past. This fall the American Place Theater will recreate a medicine show with the help of 15 performers who once traveled the medicine show circuit. In conjunction with these performances, the American Museum of Natural History is pleased to present a special program on the history and anthropology of the medicine show.

Using slides and tape recordings, three scholars will discuss different aspects of the medicine show tradition. Dr. Brooks McNamara, author of *Step Right Up: A History of Medicine Shows*, will take a look at the evolution of the

medicine show in "From Mountebanks to Medicine Showmen. Three Hundred Years of Traditional American Entertainment." Mr. Glen Hinson from the Department of Folklore and Folklife at the University of Pennsylvania will discuss "Selling Medicine through Song: Traditional Music on the Medicine Show Stage." Mr. William Gelfund, a collector of medicine show memorabilia and an author on pharmaceutical history will present "From Kickapoo to Wild West: Native American

Imagery in the Medicine Show." In the course of the program, the lecturers will discuss remedies as part of 19th century medical philosophy and the role of racial stereotypes in medicine shows.

The program is free to members of the Museum and \$3.00 for non-members. Your Membership Card is your ticket of admission. Seating will be on a first come, first served basis. Please see the adjacent box for information about the performances at the American Place Theater.

Performances of the VI-TON-KA Medicine Show, featuring veterans of the old Medicine Show Circuit, will be presented at the American Place Theater from October 4 through 16. Tickets are \$15.00. Museum Members will receive a \$2.00 discount on tickets upon presentation of their Membership card. For ticket reservations and information, please call (212) 246-3730. The American Place Theater is located at 111 West 46th Street.

Participating, Donor, and Contributing Members are invited to a special

Behind-the-Scenes Tour of the Department of Herpetology

Thursday Evening, November 3, or Sunday, November 6
\$6.00 and open only to Members and their guests

Join us for a tour of the Museum's magnificent collection of amphibians and reptiles. Meet departmental scientists and discuss with them

their current research. Visit the research laboratories and collection rooms that are never open to the general public. Here Members will view the

department's breeding colony of king snakes, and learn about the department's research ranging from poison dart frogs to several remarkable species of unisexual lizards. Members will also see the different techniques used in collecting and preparing specimens so that they can be studied by scientists from around the world.

Coffee, tea, and punch will be served at the conclusion of the tour. Please use the adjacent coupon to register. Early registration is strongly advised for the limited number of places.



Behind-the-Scenes Tour (Open only to Participating, Donor and Contributing Members)

Tours will leave at fifteen-minute intervals beginning at 5:15 p.m. on Thursday, November 3, and 10:30 a.m. on Sunday, November 6. We will send you a confirmation card by mail which will indicate the exact time your tour will start.

Please indicate a first, second, and third choice (if possible).

- _____ Thursday, Nov. 3, between 5:15 and 6:00 p.m.
- _____ Thursday, Nov. 3, between 6:00 and 7:30 p.m.
- _____ Sunday, Nov. 6, between 10:30 and 12:00 noon
- _____ Sunday, Nov. 6, between 1:00 and 2:30 p.m.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Enclosed is my check for \$ _____ to reserve _____ places at \$6.00 each for the Behind-the-Scenes Tour

Please make check payable to the American Museum of Natural History and mail with a self-addressed stamped envelope to: *Behind-the-Scenes Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.

Future Gazing with Isaac Asimov

Wednesday, October 26, 7:30 p.m. Auditorium
Sold out from previous issue

Throughout human history, inventions have transformed the way we live and the way we view the world. The wheel, the printing press, electricity, computers, and television have all profoundly influenced our society and culture. Before the invention of the elevator, for example, a building's height was limited by the number of stairs people were willing to climb. Few people then could imagine the vertical skyscrapers that shape today's skylines.

What will be the inventions of the future, and how will they change our lives? Members are invited to join Dr. Isaac Asimov as he speculates about what the future holds in store for us at a special Members' Evening Program. He will discuss the scientifically possible and the scientifically fantastic, as well as what we might expect and what will

surprise us. He will look at both the benefits and hidden dangers that future inventions may bring.

Dr. Asimov is one of the world's most well-known and popular writers of science fact and fiction. His prodigious output includes more than 260 books, and he recently completed his first best-seller, *Foundation's Edge*, which is the long-awaited sequel to his *Foundation* trilogy.

This program, advertised in the September issue of *Rotunda*, is open to Members and their guests at \$5.00 per ticket. Non-member tickets may be purchased at \$9.00 per ticket. To order tickets please use the adjacent coupon. Refreshments will be served outside the Auditorium from 6:30 to 7:30 p.m., compliments of Remy Martin Amerique and *Natural History* magazine.

An Evening with Isaac Asimov, October 26
Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$5.00. Associate Members are entitled to one. All other tickets are \$9.00.

Number of Members' tickets	X \$5.00	\$
Number of additional tickets	X \$9.00	\$
Total amount enclosed:		\$

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Membership category: _____

Daytime Phone: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Asimov, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

ROTUNDA

ISSN 0194-6110

Vol. 8, No. 8
October 1983

Henry H. Schulson — Manager of Membership Services
Stanton G. Orser — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Ternes — Editorial Advisor
Kate Bennett-Mendez — Editorial Advisor
Kim Hamilton — Editorial Assistant
Marion Halberg — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Elected Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327.
© 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y. 341

Printed by Waldon Press, Inc., New York

Unnatural Doings

Saturday, October 29, Kaufmann Theater
1:30, 3:30, and 7:30 p.m.

Members: \$1.50 for children, \$3.00 for adults. Non-members: \$4.00

Every culture has a reverence for the supernatural and unknown: spirit stories, ghost stories, tales of midnight rambles in the world of magic, all point to a common human need to understand the unexplainable.

Spirits, sprites, and spooks from every corner of the globe will fill the Kaufmann Theater this October at a Members' Halloween program. Conjuring them all up will be storyteller Laura Simms and musician Steven Gorn. Ms. Simms will spin tales of the supernatural from cultures around the world,

while Mr. Gorn will use instruments to provide the haunting music and sound effects.

The afternoon sessions, which are geared for family audiences, will include a classic Korean tale about the snake and the woodcutter, a Maori ghost story, and a ghost story that Ms. Simms claims actually happened to her. Ms. Simms will also tell families how they can transform themselves into witches.

The evening session will be for adults. Among the featured tales will be a love story about a king who buys a dream from the Dream Mer-

chant, and a Mayan myth about a young man who acquires more magic than he can handle.

Laura Simms is one of America's foremost performers and students of world folklore. She is a major force in the renaissance of storytelling in the United States and has performed at the Museum on countless occasions. Steve Gorn is an acclaimed performer and teacher of world music. He is a master of Indian, Asian, and African flutes and percussion instruments. To order tickets, please use the adjacent coupon.

Spirit Stories from Around the World, Saturday, October 29. Members' Tickets are \$3.00 for adults and \$1.50 for children. Non-member tickets are \$4.00 for adults and children.

Number of Member children tickets	X	\$1.50	\$
Number of Member adult tickets	X	\$3.00	\$
Number of non-member tickets	X	\$4.00	\$
Total amount enclosed:			\$

Please indicate a first, and second choice, if possible.
1:30 p.m. 3:30 p.m. 7:30 p.m.
(for families) (for families) (for adults)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Spirit Stories, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Dinosaurs Are Forever

Sunday, November 20, Kaufmann Theater
11:00 a.m., 1:30 and 3:30 p.m.

Open only to Members and their guests
\$2.00 per person



What were the dinosaurs? Why did they disappear? What do we know about them? Young Members are invited to learn about these

extraordinary reptiles with Stella Stegosaurus and the Hadrosaur from Hackensack in a musical program by Michele Valeri. This song-filled

A Charles R. Knight interpretation of what the dinosaurs were like.

Dinosaurs Are Forever, Sunday, November 20. Participating, Donor and Contributing Members are entitled to six tickets at the Members' price of \$2.00. Associate Members are entitled to one. All other tickets are \$4.00.

Number of Members' tickets	X	\$2.00	\$
Number of additional tickets	X	\$4.00	\$
Total amount enclosed:			\$

Please indicate a first and second choice of times.
11:30 a.m. 1:30 p.m. 3:30 p.m.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Daytime Phone: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Dinosaurs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

exploration of times millions of years ago uses many musical idioms — country, swing, rock — as well as huge over-the-shoulder puppets to portray life in prehistoric times.

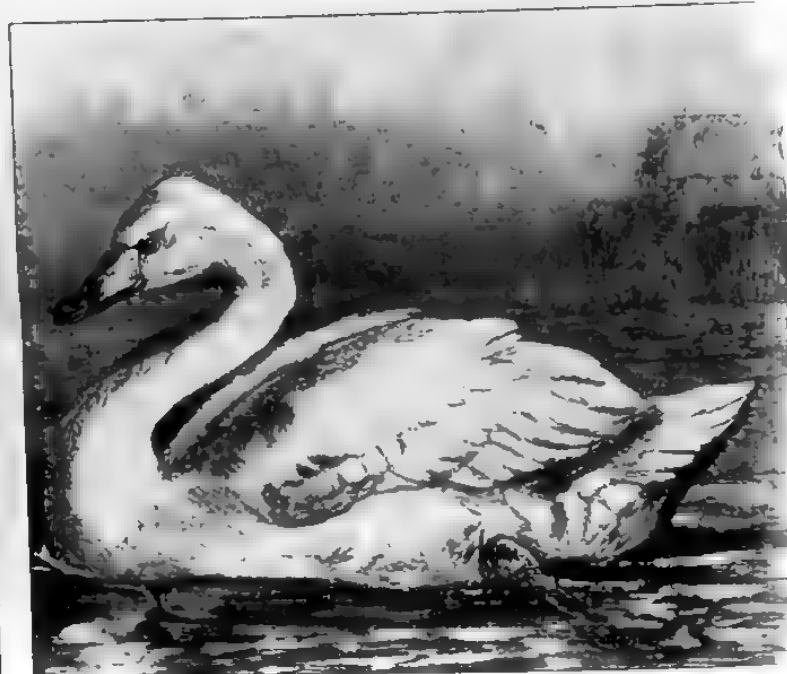
Michele Valeri is a singer, songwriter and gifted children's entertainer. Her ten years of teaching and performing have brought her to every kind of stage, from elementary school auditoriums to the halls of the Kennedy Center for the Performing Arts in Washington D.C. For this program she will be joined by bluegrass tenor/fiddler Mike Stein who also plays banjo and mandolin, and yodels!

Dinosaurs Are Forever is intended for children ages ten years and under. It is open only to Members and their guests. If tickets still remain in November we will open the program to the public. To order tickets please use the adjacent coupon.

Tales of the Woodwinds

Sunday, October 16, Kaufmann Theater,
1:30 and 3:30 p.m.

Members: \$1.50 for children, \$2.50 for adults.
Non-members: \$4.00



This October, the Story Concert Players will use a delightful mixture of live chamber music, pantomime, and narration to present two well-known animal stories. The first is a musical version of Noah's Ark, in which each group of animals is represented by a different musical instrument: the clarinet as the cattle in the field, the flute as the birds, the oboe as the creatures of the ground. "Mrs Noah" tells the story, and the animals chime in, musically speaking their lines.

The second story is a retelling of Hans Christian Andersen's "The Ugly Duckling." As the narrator tells the story, a mime recreates it to the music of Saint-Saens.

Both the stories are geared for audiences five years and older, and audience participation is encouraged. Between stories, there will be a discussion of woodwind instruments and a demonstra-

This swan was once an ugly duckling. Join the Story Concert Players for a musical retelling of this classic Hans Christian Andersen story in *Once Upon a Woodwind*.

tion of how they are played. The Story Concert Players are a repertory company devoted to providing quality chamber music and theater to young audiences. They have toured throughout the greater New York area and are under the artistic direction of award-winning composer Roselyn Winokur.

This program, advertised in the September issue of *Rotunda*, has limited tickets remaining as this issue goes to press. For ticket information please call (212) 873-1327.

Member's Book Bargains

We are pleased to offer you this, the first book supplement of the American Museum of Natural History. It officially inaugurates a new benefit for Members of the Museum.

- The forty or so books in this supplement represent some of the finest books recently published in the fields of anthropology, archeology, evolution, ecology, natural history art and photography, dinosaurs and paleontology, and related areas — probably a greater variety of such books than you could find in most bookstores. All have been carefully scrutinized by the Museum for accuracy, interest, and significance.
- You can purchase these books at prices that are substantially lower than the publishers' prices — at least 10% in most cases with some at 30%, 40%, even close to 50% less.
- The Museum has been exceptionally fortunate in that several famous authors have agreed to personally sign limited numbers of books exclusively for the Museum. These include Roger Tory Peterson, Eliot Porter, and the Japanese photographer Hiroshi Hamaya, among others.

This catalog is an experiment — a way to bring fine books at reduced prices to our Members and friends. If it is a success (your order will confirm this!) then we plan to expand the variety and number of books offered in future months. We welcome your suggestions or criticisms.

If you buy books for yourself or for holiday gifts, then you will find this supplement not only a time saver but a money saver as well. We doubt you could find a comparable selection of books anywhere at these discounts.

Finally, we would like to outline our unconditional guarantee:

Any book you purchase from this supplement may be returned within 30 days for any reason for a full refund of both your purchase price and shipping costs.

If you ever have a complaint or are dissatisfied with our service, please write to us at the Museum. We will make sure your problem is taken care of promptly and efficiently.

A Celebration of Birds: The Life and Art of Louis Agassiz Fuertes

Robert McCracken Peck, Introduction by Roger Tory Peterson. Large-format hardcover, profusely illustrated. Walker & Co.

"He stands without peer, placed way ahead of Audubon," Roger Tory Peterson wrote about Fuertes. Indeed, to those who know birds, Louis Agassiz Fuertes (1874-1927) is considered to be America's greatest painter of birds. "Fuertes," wrote Peterson, "brought the art of bird portraiture to its highest degree of excellence."

A Celebration of Birds is a milestone in the publication of natural history books. It is the first major, definitive look at Fuertes's art, his life, and his influence.

Forty-nine extraordinary color plates and over 100 black-and-white drawings, washes, and other illustrations — many never before published — show the full range of Fuertes's genius. The book, created by the Academy of Natural Sciences, brings together the major Fuertes collections in museums around the country, including the peerless collection at the American Museum of Natural History.

"The reproductions . . . are uniformly superb. . . . For the first time, justice has been done to the brilliant textures, meticulous detail, and exquisite shadings of Fuertes's art." — *Philadelphia Inquirer*

Special Autographed Edition: Roger Tory Peterson and Robert McCracken Peck have agreed to sign a limited number of volumes exclusively for Members and friends of the American Museum of Natural History. Each volume is personally autographed by both Peck and Peterson, and is available at **no extra cost**. They are \$30.00 each, the same price as the regular, unsigned books. Please order early as books will be shipped on a first-come, first-served basis until the limited supply is gone.

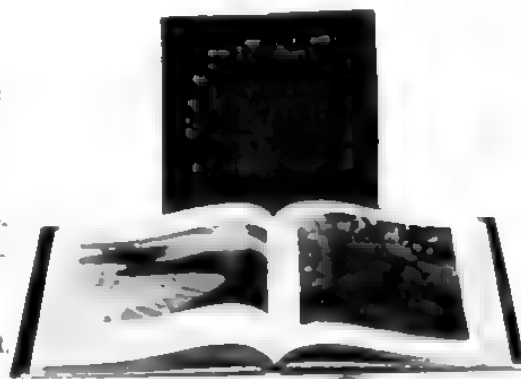
Members' price for autographed volume: \$30.00



American Places

Photographs by Eliot Porter, text by Wallace Stegner. Large-format hardcover, profusely illustrated. E.P. Dutton

American Places is the result of a brilliant collaboration between Eliot Porter, one of the world's great photographers, and Wallace Stegner, the Pulitzer Prize-winning novelist and historian. It is an epic work, a chronicle of the discovery of our American land in extraordinary color photography and elegant, literate prose. Porter crossed the continent, following the footsteps of the explorers who discovered our land. He captured in 89 magnificent full-page color photographs the great landscapes of our country — the Great Smokies breaking through the mist, the sweeping prairies, the wastelands of Death Valley, the Maine islands, the California headlands, and much more.



Special Autographed Edition: Eliot Porter has agreed to sign a limited number of volumes for Members and friends of the American Museum of Natural History. Each volume carries his personal signature on a special bookplate tipped onto the endsheets.

Porter is considered by many to be the greatest color landscape photographer ever. He was the first color photographer to be given a one-man exhibition at the Metropolitan Museum of Art, and when that landmark show opened in 1979, the Met hailed Porter as the "preeminent pioneer and innovator who first gave credibility to color photography as a fine art medium." John Neary, writing in *American Photographer*, said: "One cannot help but realize that here is another Audubon, another Muir, a truly great naturalist at work." Single prints of Porter's work now average \$1,200 each, and the full portfolio of 55 prints in the Metropolitan show sold out at \$33,000. Quantities of *American Places* are quite limited, so please order as early as possible to avoid disappointment. Orders will be shipped on a first-come, first-served basis until the supply is gone.

Autographed volume: \$50.00

Edward Sheriff Curtis: Visions of a Vanishing Race

Florence Curtis Graybill and Victor Boeson. Large-format hardcover, profusely illustrated. American Legacy Press

This splendid hardcover volume, written by Curtis's daughter, presents 175 of the great Indian photographer's finest works in full-page sepia reproductions. Many are published for the first time since his original, monumental work, *The North American Indian*. This superb account of Curtis's 30-year quest is drawn from his own writings, the recollections of his daughter, and his extensive correspondence.



Originally published at \$35.00. **Members' price: \$19.95**

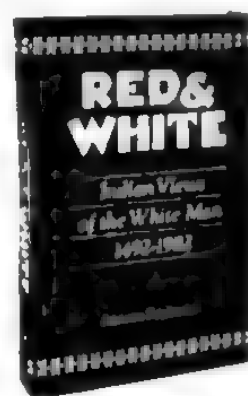
Red & White: Indian Views of the White Man 1492-1982

Annette Rosenstiel. Hardcover, illustrated. Universe Books

During five centuries of contact, Indians have spoken to whites with defiance, despair, resignation — and usually with great eloquence. For the first time their statements have been brought together in one volume. Included are the words of Sitting Bull, Chief Joseph, Tecumseh, Pocahontas, Crazy Horse, and many forgotten Indians whose voices are heard for the first time. The author includes excellent background material in a fascinating text. A profoundly moving book, a different history of America that all Americans should read.

"The breadth and power of this book are astonishing." — Dee Brown, author of *Bury My Heart at Wounded Knee*

Publisher's price: \$14.95. Members' price: \$13.45



Treasures of African Art

Malcolm McLeod. Large-format hardcover, profusely illustrated. Abbeville Press

One of the finest presentations of African art ever published, with large color plates of magnificent pieces in the British Museum.

"I can think of no better argument for the greatness of African art than this book. . . . But it's not only the art. It's also the excellent color photography, the clear, crisp text, and the beautiful layout of the book itself which creates this impression." — Theodore Wolff, *Christian Science Monitor*

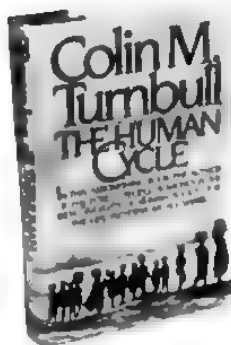
Publisher's price: \$39.95. Members' price: \$28.75



The Human Cycle

Colin Turnbull. Hardcover, Simon and Schuster.

In his latest and most controversial book, Turnbull explores how cultures handle the various stages of the life cycle, from childhood to old age, by drawing on his work with the Mbuti, the Hindu, and his own upper-class British upbringing. Turnbull concludes that, behind the different rites and customs, all men and women live in the same eternal, immutable human cycle. This eminent anthropologist also suggests that many primitive cultures cope with the problems of love, work, loneliness, and growing old much better than our own. His disquieting conclusion is that our advanced Western civilization may have lost some fundamental human values.



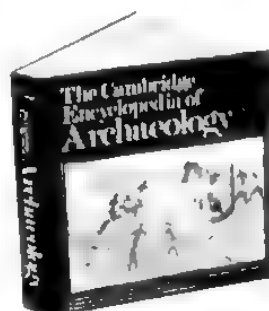
"The Human Cycle constitutes a major contribution not only to ourselves and our society, but also to the solution of the problems which threaten to destroy us. It is a marvelously readable and inspiring book. If there ever was a book that was destined to become a classic, this is it." — Ashley Montagu

Publisher's price: \$14.95. **Members' price: \$13.45**

The Cambridge Encyclopedia of Archeology

Edited by A. Sherratt. Large-format hardcover, profusely illustrated. Crown

Over 50 outstanding scholars contributed to this comprehensive world-wide survey of archeology. The encyclopedia traces the development of human culture from its earliest beginnings in Africa and its spread throughout the world to the rise and fall of the great civilizations of Sumer, Egypt, Greece, Rome, and many others. Enriched with over 500 color and black-and-white illustrations with extensive maps and supplementary material. An invaluable reference work, it also makes a great gift for students or anyone with an interest in archeology and anthropology.



Publisher's price: \$35.00. **Members' price: \$27.50**

Books by Stephen Jay Gould

Hardcovers, illustrated. W.W. Norton.

"There is grandeur in this view of life," wrote Charles Darwin in the last line of the *Origin of the Species*. The grandeur in that view is apparent in the brilliant writings of Stephen Jay Gould. For ten years Gould has written a column in *Natural History* magazine entitled "This View of Life," and the American Museum of Natural History is proud to offer its Members and friends four outstanding books by Gould.

Ever Since Darwin, *The Panda's Thumb*, and *Hen's Teeth and Horse's Toes* are Gould's delightful collections of essays on evolution, history of science, Darwiniana, time, paleontology, and much more. *The Mismeasure of Man* is Gould's brilliant treatment of the questions of human intelligence, I.Q. testing, and science's often misguided attempts to classify humans on the basis of "intelligence."

"Stephen Jay Gould is one of the most brilliant of our younger scientists, gifted, among other things, with the ability to write." — Ashley Montagu

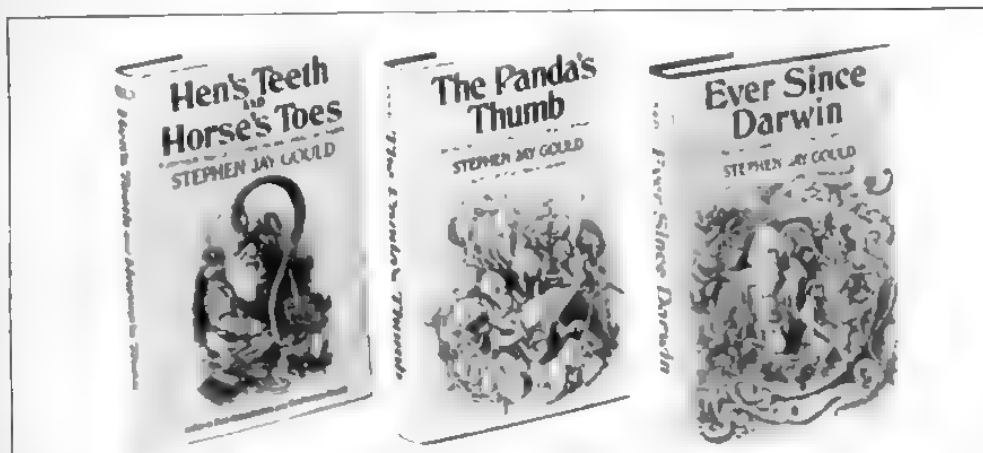
About *Ever Since Darwin*: "Essays which combine literacy, comprehensibility, and depth of insight." — Carl Sagan

About *The Panda's Thumb*: "Mind-stretching." — *The New York Times Book Review*. "An example of science writing at its best." — *The New Yorker*

About *Hen's Teeth and Horse's Toes*: "It is an absolutely exhilarating book." — *Chicago Sun-Times*. "Terrific." — Isaac Asimov

About *The Mismeasure of Man*: "A rare book — at once of great importance and wonderful to read." — *Saturday Review*. "Brilliant and important." — *New York Times Book Review*

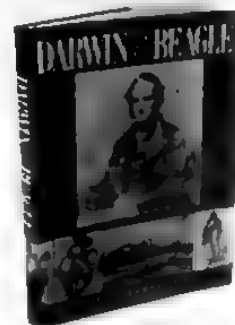
Ever Since Darwin: Publisher's price: \$12.95; **Members' price: \$11.00**
The Panda's Thumb: Publisher's price: \$12.95; **Members' price: \$11.00**
Hen's Teeth and Horse's Toes: Publisher's price: \$15.50; **Members' price: \$13.95**
The Mismeasure of Man: Publisher's price: \$14.95; **Members' price: \$12.70**



Darwin and the Beagle

Alan Moorehead. Hardcover, profusely illustrated. Crescent Books.

In 1831 Charles Darwin embarked on the H.M.S. *Beagle* on what would become one of the most important journeys in the history of science. In this book, Moorehead tells the story of the voyage and brings in much interesting material that Darwin never wrote about in his *Voyage of the Beagle*. Moorehead's book is at once a gripping adventure story and a profound look into the mind and sensibilities of Charles Darwin.



This splendid book has been enriched with over 190 illustrations from the period, including brilliantly colored engravings, paintings, etchings, and drawings. Much of *Darwin and the Beagle* appeared in *The New Yorker* magazine, and it was chosen as *Critics' Choice of the Year* by the *Sunday Times* of London.

"Entertaining reading, enchantingly illustrated." — *The Times* (London)

Originally published at \$20.00. **Members' price: \$17.95**

Scientists Confront Creationism

Edited by Laurie R. Godfrey. Hardcover, W.W. Norton.

For the first time, a group of highly distinguished scientists addresses the major arguments of the creationists. These scientists, including Stephen Jay Gould and David M. Raup, discuss such questions as: How old is the earth? Do gaps in the fossil record refute evolution? Could life have arisen by chance? What is the evidence for human evolution? Who are the "scientific creationists"? and much more. A fascinating and comprehensive introduction to evolution, earth history, and the evolution/creation debate.



"A badly needed overview of the scientific view of evolution, explaining clearly and straightforwardly exactly what scientists think and why." — Isaac Asimov

"Should be read by any parent, teacher, school-board member, and legislator who has any doubts about where the truth lies." — N.H. Horowitz, California Institute of Technology

Publisher's price: \$19.50. **Members' price: \$17.55**

The Art of Natural History

S. Peter Dance. Large-format hardcover, profusely illustrated. Overlook Press.

This lavishly illustrated, oversized volume surveys the development of natural history art from the earliest times to the present. Included are virtually all the great artists and illustrators — Dürer, William Blake, Leonardo, Audubon, D.G. Elliott, Gould, Catesby, Wolf, Fuertes, and hundreds of others. 250 black-and-white illustrations and 63 stunning color plates show some of the most spectacular and beautiful animal illustrations ever. This is the definitive volume on the art of natural history and is essential for anyone interested in the subject.



"Many of the pictures are so lively that they fairly roar to be released from the pages and freed to hang on the walls." — *Time*

"The color plates are gorgeous . . . the book has been brilliantly printed in Holland, bound in Belgium." — *Newsweek*

"A collector's item the day you buy it. . . This book can only be described as extraordinarily beautiful." — Roger Caras

Publisher's price: \$75.00. **Members' price: \$45.00**

Wildlife Photography: The Art and Technique of Ten Masters

Ann Guilfoyle, Susan Rayfield. Large-format hardcover, profusely illustrated. Amphoto.

In *Wildlife Photography*, ten of the world's greatest wildlife photographers detail their methods, techniques, equipment, and special knowledge — and how they sell their photos. It addresses all the major challenges of animal photography — from stalking animals and closeup photography to underwater shooting. Each chapter includes some of the finest examples of each photographer's work — over 120 breathtaking shots. More than half of these photographers have been featured in *Natural History* magazine. An essential book for anyone with a serious interest in nature photography.



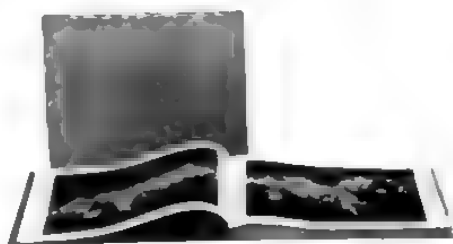
"The pictures are glorious; the book is truly instructive, even inspiring." — *Los Angeles Times*

Publisher's price: \$24.95. **Members' price: \$22.45**

Landscapes

Photographs by Hiroshi Hamaya. Very large, slipcased hardcover, profusely illustrated. Harry N. Abrams, Inc.

The renowned Japanese photographer Hiroshi Hamaya spent two decades in quest of the most awesome and beautiful landscapes on the earth's surface. His finest landscape photographs are magnificently reproduced here in full-page color plates in this lavish volume. It is published by Harry N. Abrams, the country's leading fine art publisher, as a bound portfolio of color photographs. *Landscapes* measures over 15 inches by 11 inches and is bound in cloth, stamped, and slipcased in a cloth-bound case.



"For many of you Hamaya is already an institution and a legend. What you see here is not just a collection of photographs but a celebration of our earth through the vision of a poet with a camera." — Ernst Haas, in the preface.

"As an accomplishment in color printing, book craft, and quality, this boxed, 167-page volume is at a level rarely reached by photography books. As an artistic and philosophical statement, Hamaya's book is a resounding affirmation that the earth possesses a majesty nearly beyond description. . . ."
— Owen Edwards, executive editor of *American Photographer*, in *Natural History* magazine

Special Autographed Edition: The photographer, Hamaya, has generously agreed to sign personally 300 copies for the American Museum of Natural History. These signed copies will be offered to Members and friends at \$125, which is the same price as the unsigned volume; requests will be honored on a first-come, first-served basis.

To the Ends of the Earth

John Perkins with the American Museum of Natural History. Hardcover, profusely illustrated. E.P. Dutton.

Around the turn of the century, the American Museum of Natural History sent forth the last great expeditions to explore the final unknown areas of the earth. These explorers photographed landscapes and peoples never before seen by Western man. Now the rarest and finest of their photographs have been gleaned from the Museum's vast archives to create this haunting and fascinating book about the last golden age of exploration.



Publisher's price: \$27.50. **Members' price: \$22.00**

Basin and Range In Suspect Terrain

John McPhee. Hardcover. Farrar, Straus & Giroux.

Basin and Range and *In Suspect Terrain* form a brilliant narrative of the geological history of the American continent. In these two highly acclaimed books, McPhee tells the story through conversations and travels with two geologists and frequent excursions into the history of science and the evolution of the American landscape. In doing so he takes a close look at the way science works and how geologists reconstruct the past.



"*Basin and Range* is an epic adventure into the living earth." — *Chicago Sun-Times*

"After John McPhee's *Basin and Range* the world will never be the same for me. . . . He has put geology into readable, understandable prose, even made it human and humorous." — *The Boston Globe*

"[McPhee] makes the earth move." — *Time* magazine

"[*In Suspect Terrain*] is a book you cannot put down." — *Natural History*

"John McPhee has demonstrated that he is our best and liveliest writer about the earth." — Wallace Stegner, *Los Angeles Times Book Review*

Limited, Autographed Edition: *Basin and Range* and *In Suspect Terrain* are also available together as a set in a boxed edition entitled *Annals of the Former World*. The edition is strictly limited to 450 sets. Each set has been personally signed by John McPhee.

Basin and Range: Publisher's price: \$10.95; **Members' price: \$9.86**
In Suspect Terrain: Publisher's price: \$12.95; **Members' price: \$11.66**
Annals of the Former World, both of the above in a signed, limited edition of 450, slipcased: **\$75.00**

Atlas of Early Man

Jacquetta Hawkes. Large-format hardcover, profusely illustrated. St. Martin's Press.

This unusual volume traces concurrent developments across the Ancient World, from 35,000 BC to AD 500. What was happening in Western Europe when Knossos was supreme in Crete? At what stage was China when the Roman Empire was at its height? These are the kinds of questions the author addresses. Over 1,000 drawings, photographs, and maps enrich this book. An unusually clear and fascinating treatment of ancient history, archeology and anthropology.

Publisher's price: \$25.00 **Members' price: \$22.50**



Dinosaurs: An Illustrated History

Edwin H. Colbert. Hardcover, profusely illustrated. Hammond.

This fascinating volume is possibly the greatest general book on dinosaurs to appear in at least a decade. It is written by Edwin H. Colbert, creator of several of the world-famous dinosaur halls at the American Museum of Natural History. Colbert's text is illustrated with 200 illustrations, including 60 in full color and 50 drawings specially commissioned for the book, representing our latest understanding of how dinosaurs looked.



Colbert tells the complete story of the dinosaurs: their discovery, the bitter competition in the 19th century between rival dinosaur collectors, dinosaur expeditions; the complete life history of the dinosaurs, an enthralling section on the various theories of their sudden and mysterious extinction; maps giving the location of dinosaur discoveries; and, of course, descriptions and pictures of all the "terrible lizards," including Tyrannosaurus, Stegosaurus, Triceratops, Brontosaurus, and many others. Colbert has written a text that is clear and a delight to read. Anyone with an interest in dinosaurs will find this to be an utterly fascinating and absorbing book. Highly recommended.

Publisher's price: \$30.00 **Members' price: \$25.50**

Dinosaurs, Mammoths, and Cavemen: The Art of Charles R. Knight

Sylvia Czerkas, Donald Glut. Softcover, profusely illustrated. E.P. Dutton

Knight was the first and greatest artist to re-create the extinct creatures and strange, primeval landscapes of the prehistoric earth. His paintings (many of which are on display in the Museum) were not only hauntingly beautiful but also scientifically accurate. Includes over 120 splendid full-color examples of Knight's work.

"Charles R. Knight opened our eyes to a former world. . . . None has excelled him." — Edwin H. Colbert

Publisher's price: \$14.95. **Members' price: \$12.90**



The Growth of Biological Thought

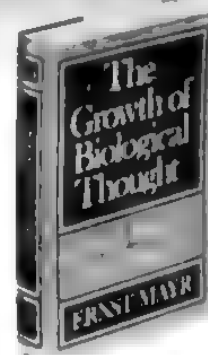
Ernst Mayr. Hardcover. Harvard University Press

In this monumental book, Ernst Mayr, who is curator emeritus at the American Museum of Natural History and former director of the Museum of Comparative Zoology at Harvard, explores the history of biology, the philosophic background of the life sciences, and the analysis of evolutionary theory in the broadest sense.

"It is a book of almost overwhelming interest, power, importance, breadth, depth, and length — a big book in every possible dimension. It has been received with praise sometimes bordering on stupefaction. The praise is warranted." — Horace Freeland Judson, *Science* 82

"This is an extraordinary, epic work. . . . [Mayr is] one of the most influential biologists of this century. . . . [This book] can, and should, find a place in the personal library of every student and professional worker in biology or the history of science." — Douglas Futuyama, *Science*

Publisher's price: \$30.00 **Members' price: \$27.00**



The New Larousse Encyclopedia of Animal Life

Large hardcover, profusely illustrated. Bonanza Books

Since its first publication, the Larousse Encyclopedia has sold over a quarter million copies and has become one of the most respected and successful books of its kind. This success is due to its accurate, clear text, its tremendous scope, and its over 800 photographs of animals in full color. No other animal encyclopedia in one volume comes close to the Larousse in beauty of illustrations, scope, and usefulness. Makes a superb gift for anyone (especially young people) interested in animal life.



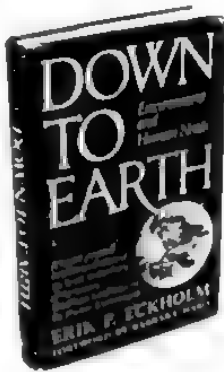
Originally published at \$60.00 **Members' price: \$39.50**

Erik Eckholm. Hardcover. W.W. Norton

In this major book, Eckholm, provides an overview of the world's critical environmental problems and challenges. *Down to Earth* is one of the most balanced and comprehensive books published on the world environment in years. Required reading for anyone concerned with the critical environmental problems of the 80s.

"An expert, all-encompassing appraisal of the global environment." — *Kirkus Reviews*

Publisher's price: \$14.95 Members' price: \$13.45



of beautiful softcover editions for Americans who feel it's not only nostalgic — but important — to remember. Eric Sloane is a historian and artist who has recreated for future generations the craftsmanship and artistry that is part of our country's memoirs and traditions

An Age of Barns. With pen and words Mr. Sloan explores all there is to know about early American barns, those "shrines of a good life" \$8.95

A Reverence for Wood. Here Mr. Sloane ranges over the aesthetics of wood, wooden implements, carpentry, tree identification, and other areas and manages to make a commonplace thing, wood, uncommon. Heavily illustrated with pen-and-ink drawings. \$4.95

Our Vanishing Landscape. This delightful book explores the landscape of rural America, touching on such things as trees, fences and walls, mills, canals, roads and wooden roads, covered bridges, country churches, and more — all illustrated with hundreds of pen-and-ink drawings \$4.95

Diary of an Early American Boy: Noah Blake, 1805. Noah Blake was fifteen years old in 1805, and his diary, discovered in an old house, is here reproduced. Mr. Sloane has added a charming and informative commentary and many drawings. \$4.95

A Museum of Early American Tools Here Mr. Sloane delves into the tools and implements of our forefathers — axes, hatches, hammers, adzes, canoes, rabbets, plows, saws, bitstocks,, wheels, and many more. With dozens of drawings. \$4.95

Folklore of American Weather. A compendium of early American folklore about the weather, including sayings, rhymes, aphorisms, and so forth. Mr Sloane skillfully separates fact from fiction. Lots of delicate pen-and-ink drawings. \$3 50



**The 1984 Calendar for Members of the
American Museum of Natural History**

A magnificent full-color calendar of the finest examples of American Indian ceremonial art in the Museum. This very large wall calendar is our most lavish yet. Some highlights.

- The finest carved Bella Coola mask known, an intricate representation of the sun god
- A delicate Pomo basket interwoven with brilliant feathers and abalone shell ornaments
- A rare painting by Chief Short Bull showing the sacred Sun Dance
- Intricate weavings, beadwork, pottery, and much more, all in radiant color
- Ample room for notes, birthdays, or appointments,

The 1984 Members Calendar is an unusually beautiful item for your gift list

Bookstore price: \$7.50. Members' price: \$6.75



Teach yourself birds songs. When walking in the woods, have you ever wished you could identify a bird by its song? Any one of these three records will teach you with recorded examples, step by step, how to recognize a bird by its call. Each record comes with a 32-page manual. Please specify *Songs of Eastern Birds*, *Songs of Western Birds*, *Common Bird Songs*. Record with booklet is **\$5.95**. Essential for birders, as a bird's song is usually the most positive means of identification

Fading Feast: A Compendium of Disappearing American Regional Foods. Raymond Sokolov. Hardcover, illustrated. *Fading Feast* is the result of a two-year odyssey for *Natural History* magazine in which Sokolov criss-crossed the country in search of regional American foods. From Key West to Minnesota he discovered the old cooks and chefs who still practice early American recipes and traditions in preparing food, and their wisdom is preserved in this delightful book containing over 100 recipes. "If you care about American cooking, as I do, you will find *Fading Feast* an enor-

mously rewarding book." — Craig Claiborne. Publishers's price: \$17.95; **Members' price: \$15.36**

Early Scientific Instruments. Nigel Hawkes. Hardcover, illustrated. 73 full-color photographs of rare and intricate scientific instruments — astrolabes, microscopes, orreries, sundials, and many more. "This gorgeous book . . . includes pictures of mad inventions and other that were quite sane. All were handsome." — *Boston Globe*
Publisher's price: \$35.00; **Members' price: \$29.75**

Galapagos: Islands Lost In Time. Tui De Roy Moore. Hardcover, profusely illustrated. Moore lived on the Galapagos for ten years and has captured in superb photographs the eerie vistas, dramatic volcanic formations, and exotic wildlife of the Galapagos islands. More than 300 absolutely brilliant photographs in this hardcover volume show hundreds of species and many breathtaking sights. Publisher's price: \$30.00; **Members' price:** **\$27.00**

An unusual travel log and notebook for the nature traveler. Blank, ruled pages provide space for taking notes on animals and plants, exposure recordings for photographs, travel notes, or just plain thoughts and feelings. The sturdy, simulated leather cover is stamped in gold. Twelve exquisite 19th-century colored engravings of animals and plants make this a special journal. A different sort of "travel log" for backpackers, campers, nature lovers, photographers, and, of course, naturalists. **Members' price: \$7.95**

[illegible]

For faster service, call toll free 1-800-247-5470 Visa and MasterCard accepted.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Make checks payable to the American Museum of Natural History
Or, charge my credit card (circle one) MASTERCARD VISA
Acct #: _____
Exp: _____ Signature: _____

MAIL TO: Members' Book Program
American Museum of Natural History
Central Park West at 79th Street
New York, NY 10024

St. Catherine's Journal

A Day with the Snakes, a Night with the Frogs

St. Catherine's Island lies off the coast of Georgia, one of the chain of barrier islands that runs from South Carolina to Florida. It is approximately the same size and shape as Manhattan. In 1972 the Edward John Noble Foundation, which owns St. Catherine's, approached the American Museum of Natural History to help set up a research program taking advantage of the unique natural and cultural history of the island. For the past decade Museum scientists — as well as students and scientists from other institutions — have explored and researched countless aspects of the island's vegetation, geology, archaeology and animal life.

Stanton Orser, editor of *Rotunda*, visited St. Catherine's last spring, accompanying several Museum scientists into the field as they conducted their research. The *St. Catherine's Journal* is a series of articles from his trip.

May 1983 — Toward the northern end of St. Catherine's Island, several buildings stand at what was formerly the heart of a great plantation. The largest structure, set apart from the others and called the Gwinnett house, was built before the American Revolution by Button Gwinnett, one of Georgia's signers of the Declaration of Independence. In the two centuries since then, it has had several owners, including Tunis Campbell, governor of the experimental Black state established on St. Catherine's and neighboring islands during the Reconstruction Era.

Near the old barn is the ruin of one of the first steam-powered cotton gins. Historic records in Savannah contain letters and journals of prominent businessmen who journeyed to St. Catherine's to see this new wonder in action.

Within walking distance are two rows of small cabins facing each other. Cosy and quiet — so spacious and comfortable to a visitor today — it is hard to imagine that each of them housed two entire families of slaves. All of these buildings were originally constructed from tabby, a makeshift cement made

Stanton Orser



Most of the old structures on the island were made from tabby, a makeshift cement using lime, sand, and shells from nearby Indian middens.

from lime, sand, and shells from nearby Indian middens. Now restored, the Gwinnett house serves as a museum for the island's history, and the old slave quarters provide housing for visiting scientists. Two cabins at the end of the row have been converted into laboratories — one for archaeologists and one for biologists — with long counters, tables, good lighting, and storage space.

The interior of the biology lab is startlingly white. So much so that one's gaze is drawn through the windows to the lush green of the trees and lawns outside. Dr. Richard Zweifel is sitting at one of the counters in front of a window, and as he works on the snakes and other animals in front of him, he periodically points out birds that fly by outside — bobolinks, painted buntings — warm weather visitors moving north with Spring. Zweifel is a curator in the Museum's Department of Herpetology, and stretched before him are several snakes, salamanders, and newts that he collected earlier today.

"Until recently," he explains, "herpetologists haven't spent a lot of time collecting weight and length measurements. Other scientists do — mam-

malogists, for example — and now it's a new direction for us. A high percentage of what lives here we know about. We haven't added anything new to the list in years, despite extensive fieldwork. Now we have time to learn more about the animals that live here. We have captured and released hundreds of them, then recaptured them on later trips to study their ranges and measure their growth rates; we compare the size of a particular species with examples from another geographical area. There is more time now, so we study more thoroughly."

Many of the animals in front of him will be prepared for the permanent collection. Each has been given a dose of Nembutol to relax and put it to sleep. Zweifel then measures, weighs, and inspects them for unique characteristics. Other animals are weighed and measured awake and then released.

He stretches out a long, yellow ratsnake on the counter and admires it.

"He's such a nice creature, but we have so few for study we really need him. Most of the snakes in our collection from this island are unlucky individuals that were sunning in the road when a truck or car drove over them. Because of this our collection is not very well rounded, so I'm keeping these for comparative study later. If you want to study a particular species from a particular location, you can't just get on a plane and go. You can't depend on finding the animal in the wild, especially if it's rare. That is the point of a collection. These black racers, on the other hand, are already well represented." He gestures to two snakes squirming in their canvas bags.

"We'll take them outside later and let them go."

Once the specimens destined for the American Museum's collection have been prepared and sealed in jars for travel, Zweifel picks up the bags containing the two black racers and we head out into the woods.

"These snakes have been found in every environment on the island, and as far as we can tell their range is quite extensive. Since we are no longer marking and releasing them for recapture, I can let them go anywhere on the island. Otherwise we'd release them in the exact spot where we captured them. We'll take them out to the pond behind the cabins because it is similar to the environment I found them in this morning."

Near the pond we come upon the wrecks of some old machinery and a giant *Lifesavers* sign.

"By putting them under something," Zweifel explains, "the snakes have time to get their bearings and calm down without being picked off by a hawk or some other predator." He cautiously lifts up a board, inspecting the ground underneath it. "At the same time, you don't want to toss it in with a kingsnake or something else that might eat it."

Replacing the board, he opens the sack and frees the snake, which wriggles out of the bag and zips to safety under the board. Several steps away Zweifel repeats the process for the other, then we head back.

We have quite a night still ahead of us. During the past several weeks it has rained continually, and last night was the warmest night yet this spring. This seasonal warmth should generate a lot of evening activity, and Zweifel expects the frogs and toads to be breeding like crazy.

It is late. The sun is finally down, and in the safety of darkness many of the frogs on the island have come out to croak and chortle for mates. The noisy ones — the males — are already at the ponds and streams. The females, perhaps encouraged by the warm weather, respond to the ardent voices of the males and trek from wherever they are to find a mate.

We are standing beside Wamassee Pond, halfway down the west side of the island, listening to the honking call of the green tree frogs. There is no moon, and because we are in the forest, it is completely dark. Both Zweifel and I have flashlights that we use to guide us as we walk toward the water. The noise of the frogs is extraordinary. Like voices in a football stadium, each one combines with the others to achieve a deafening roar.

As we walk, we are looking for pairs of beady orange eyes reflecting the light of the flashlights. The eyes, if they are small enough, will belong to a southern toad.

Also looking back at us from the surface of the

water are larger eyes, floating around the pond, staying well away from us, but watching intently. These are alligators. In the daylight alligators are intimidating, but you can at least see them. In total darkness, they inspire fear of nightmarish proportions. Every few steps I flash the beam across the surface of the water to see where they've moved to. Herpetological literature will tell you that alligators



Dr. Richard Zweifel catching a snake on St. Catherine's Island. While the net is useful, it serves mainly for his hobby — butterflies.

pose little threat to humans, and everyone on the island is quick to reassure you of this. Just looking at one, however, can convince you that this is by the alligators' choice, not your own. They have horrible looking jaws and mouths, powerful tails, and if you irritate them they will push themselves up on all fours, hiss at you menacingly, and sometimes even charge. As much as the islanders downplay it, each has a story about being chased, snapped at, or having a fender bitten. The incidents are infrequent, but they occur. I've felt more secure than I do now, but I follow Zweifel through the dark as he circles the pond.

I am determined to find toads. Zweifel is hoping that they too will be calling tonight so that he can record their voices. Herpetologists have determined that many different species look so much alike that they cannot be told apart by sight alone. One of the best ways to differentiate between toads is by their voices. Each species's call is unique and distinct. A routine part of collecting them now is late-night recording sessions. Zweifel wants to compare the St. Catherine's population of southern toad with the same species on the mainland.

An alligator's eyes are larger and farther apart than a toad's, so I look for something smaller. My light finds something reflecting brightly, about twenty feet away. It is smaller than an alligator's eye, but I approach cautiously. As I draw closer I can see nothing on the ground except the reflected eye. I stand right above it, bending over, and watch a spider scurry away. It is so small you could fit four on your thumbnail — definitely not an alligator. I tell Zweifel, and he laughs, saying spiders' eyes reflect light well and he sees them all the time. He suggests I look for something a little bigger.

There seem to be no toads here, but as we circle the pond we keep finding mating pairs of green tree frogs. When a male and female meet, he mounts her piggyback, clasping her around the middle. This clasping, after a varying period of time depending on the female, stimulates the female into releasing her clutch of eggs. They don't move around, but rather hold very still on a reed or leaf, the male holding the female, patiently waiting until the female

(continued on page 11)

Inanna: Queen of Heaven and Earth

Wednesday, November 16, 8:00 p.m.

Kaufmann Theater
\$8.00 for Members, \$10.00 for non-members



"In the first days, in the very first days, in the first nights, in the very first nights, in the first years, in the very first years," was Inanna, the girl become woman become goddess. She was the voluptuous center and source of all fertile power, and the unequalled goddess of love. She was the queen of heaven and earth. Her story — tender, erotic, shocking, and compassionate — was inscribed more than 4000 years ago into clay tablets and wall murals from

the ancient cultures of Sumer and Babylon. These cuneiform records of a vast literature of legends and songs are now fragments scattered throughout museums of the world.

For the first time in more than 4000 years, the cycle of Inanna will be presented in its entirety. Compiled from around the world and translated by Sumerologist Samuel Noah Kramer, the story has been arranged and unified by folklorist Diane Wolkstein. In

this special Members' Evening Program, Diane Wolkstein will bring the legends again to life with her rich storytelling skills. Members will learn of Inanna in all her various aspects and guises.

Diane Wolkstein teaches storytelling at the Bank Street College of Education and classical mythology at the New School for Social Research in New York. Since 1967 she has participated in a weekly storytelling program at the statue of Hans Christian Andersen in Central Park. She is the author of eleven books, including *Inanna: Queen of Heaven and Earth*, which she wrote with Samuel Noah Kramer.

For this special debut evening of the Inanna cycle, musicologist Geoffrey Gordon has composed an original score for instruments comparable to those of Sumer and Babylon — drum, flute, and tambourine — to accompany Ms. Wolkstein's recreation of the tales and hymns.

The program, presented in cooperation with the C. G. Jung Foundation, is \$8.00 for Members, \$10.00 for non-members. This program is made possible with support from Poets and Writers, Inc., which is funded by the Literature Program of the New York State Council on the Arts. To order tickets, please use the adjacent coupon.

Inanna: Queen of Heaven and Earth. Wednesday, November 16. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$8.00. Associate Members are entitled to one. All other tickets are \$10.00.

Number of Members' tickets	X \$8.00	\$
Number of additional tickets	X \$10.00	\$
Total amount enclosed:		\$

Name:

Address:

City: _____ State: _____ Zip: _____

Membership category:

Daytime Phone:

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to *Inanna, Queen of Heaven and Earth*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Calypso to Limbo

Wednesday, October 19, 7:30 p.m. Auditorium

Dancers, singers, musicians, and actors compose the Ron Roach Caribbean Ensemble. They will present a variety of Caribbean art forms, including well-known Caribbean island dances and music like the limbo, calypso and reggae. The performers, who wear the traditional costumes of the

Caribbean, celebrate the cultural similarities as well as the unique regional identities of Caribbean people.

The performance, sponsored by the Caribbean Program of the Department of Education, is free to all Museum visitors. For info. call (212) 873-1300, ext. 514.

Weekends in the Caribbean

During the month of October the cultural traditions of the Caribbean countries will be celebrated on weekends in the Leonhardt People Center.

The programs will explore the music, dance, and traditions of Caribbean countries, including Cuba, Puerto Rico, the Dominican Republic, Haiti, Jamaica, Trinidad, Tobago, and the Virgin Islands. Films, performances, lectures, and demonstrations from these countries will be featured each weekend.

All Caribbean Month activities, presented by the Caribbean Program of the Museum's Department of Education, are free to all Museum visitors. The Leonhardt People Center is open on Saturdays and Sundays from 1:00 p.m. until 4:30 p.m. Seating will be on a first-come, first served basis so Members are advised to arrive early to avoid disappointment. For more information please call (212) 873-1300, ext. 514.

Members' Tour of the Month African Textiles

Members are invited to take a special tour of the exhibition *African Textiles*, led by volunteers from the Museum's Highlights Tour program. Striking examples of African craftsmanship, from the magnificent court dress of kings to the beautiful Yoruba *adire* cloth, will be included. The tour will offer insights into the technological processes involved in the creation of the

fabrics, and will focus on their cultural significance within different African societies.

African Textiles marks the first time that the British Museum has lent an entire major exhibition from its collection to any institution abroad. This tour is an excellent opportunity to view the exhibition before it closes on December 4. Please use the adjacent coupon to register.

Members' Tour: African Textiles. This Tour is free and open to Participating, Donor, and Contributing Members of the Museum. Please indicate a first and second choice of times.

_____ Sunday, October 30 at 10:30 a.m.
_____ Wednesday, November 2 at 6:30 p.m.
_____ Friday, November 4 at 6:30 p.m.
_____ Saturday, November 5 at 10:30 a.m.
_____ Wednesday, November 9 at 6:30 p.m.
_____ Saturday, November 12 at 10:30 a.m.
_____ Sunday, November 13 at 10:30 a.m.

Number of people:

Name:

Address:

City: _____ State: _____ Zip: _____

Daytime Phone:

Membership category: _____

Please mail with a self-addressed stamped envelope to: *African Textiles Tour*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes on October 21.

Museum Notes

Special Exhibitions

Francis Lee Jaques: Artist-Naturalist. Through January 8, 1984. Akeley Gallery. This exhibit features this artist's pioneering work in the realm of wildlife habitat diorama design. This master of realist imagery translated the essence of a living environment, through light, space, and atmosphere, to habitat formations on two-dimensional murals.

African Textiles. Through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses, wrapping for the dead, masks, puppets, and clothing.

A Celebration of Birds: Louis Agassiz Fuertes and His Art. Through October 2. Naturemax Gallery. This exhibition of the great field artist's work will feature paintings of birds, mammals, and insects made during expeditions to Central America, South America, and Africa.

Natural History Photo Contest Winners. Through October 31. Center Gallery. These fifteen photographs, featured in the June 1983 issue of *Natural History*, were selected by a panel of judges as this year's winners.

South of Winter. Through November 30 in the Birds of the World Hall. These photographs of the coastal wildlife of the southern United States by Steven C. Wilson and Karen C. Hayden begin a national tour here.

November at the Museum

Cuban Film Festival. Wednesdays, November 2 and 9 at 7:00 p.m.

Identification Day. Saturday, November 5 from 2:00 to 5:30 p.m.

Mitchell Korn Concert. Wednesday, November 9 at 7:30 p.m.

Native American Films. Saturday, November 12, and Sunday, November 13, from 11:00 a.m. to 5:00 p.m.

Inanna: Queen of Heaven and Earth. Wednesday, November 16 at 8:00 p.m. Tickets required (See article page 10)

Blacks and Indians. Wednesday, November 16 at 7:00 p.m.

Dinosaurs are Forever. Sunday, November 20 at 11:30 a.m., 1:30 and 3:30 p.m. (See article page 4)

Commemoration of Puerto Rico's Discovery. Saturday, November 19 at 1:00 and 3:00 p.m.

Harlem Renaissance. Wednesday, November 30 at 7:00 p.m.

Forever Wild: The Adirondacks. Wednesday, November 30 at 7:30 p.m. (See article page 2.)

Planetarium Events

Cosmic Mysteries. Through November 20. (See article page 2.)

Are UFOs visitors from the stars? Could the extinction of the dinosaurs millions of years ago have a cosmic connection? What will be the ultimate fate of our universe? *Cosmic*

Mysteries explores these and other fascinating questions, the answers to which have been eluding science.

Sky show times: Weekdays: 1:30 and 3:30 p.m.

Saturday: 11:00 a.m., and hourly from 1:00 to 4:00 p.m. Sunday: hourly 1:00 to 4:00 p.m.

Admission for Participating Donor, and Elected Members is \$2.25 for adults, \$1.25 for children. For non-Member prices call 873-8828

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Sunday, from 1:30 p.m. to 4:30

p.m. It is also open on Saturday and Sunday from 10:30 a.m. to 12:30 p.m. The Center is closed Mondays and holidays

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater. (212) 496-0900

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Cafeteria Hours. Daily from 11:00 a.m. to 4:45 p.m. Wednesday, Friday, and Saturday evenings from 5:15 to 7:00 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the cafeteria, in the basement

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday 9:30 a.m. to 12:30 a.m. Rates are \$6.00 for cars, \$7.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays and Sundays: noon-5:00 p.m.

Terrace Cafe. Open daily, through October, from 11:30 a.m. to 4:30 p.m. Located on the steps of the Roosevelt entrance on Central Park

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300

St. Catherines Journal (From page 9)

carries him into the water. He fertilizes the eggs as they leave her body.

We count several mating pairs tonight, and Zweifel plucks an unsuspecting couple out of the reeds and slips them into a canvas bag. Even though he handles them, they refuse to be distracted. The male maintains his grip, and before the night is out the female will release her clutch. Zweifel can then count the eggs, a difficult statistic to obtain since frogs normally lay their eggs underwater. This provides a clue to the number of eggs to be expected from frogs on the island, which in turn helps scientists compare reproductive strategies of different species.

In our continuing quest for toads we move to another pond — coincidentally the same one just beyond the cabins, where he earlier released the snakes. This pond is not normally as large as it is now. Because of the extraordinary amount of spring rain this year, it has swelled out from its usual boundaries, moving into the surrounding forest. There seem to be fewer frogs here, if only because the noise is less deafening. Zweifel chuckles.

"We'll give you a lesson in recognizing species of frog by their voices," he says. "The green tree frogs aren't drowning out the others here."

I had assumed erroneously that I had been hearing a mixture of species muddled together all along to give the incessant droning. It never occurred to me that one species could be so loud that it would drown out the others. Here, however, I can clearly hear four distinct calls which Zweifel identifies for me. There is the same stadiumlike drone of the green tree frog — incessant, but not as loud as at the other pond. There is a cricketlike chirp, so high-pitched that many people cannot hear it, which



A male St. Catherines green tree frog calling for a mate. If there are enough of this species in one place, the cumulative sound is extraordinary

belongs to the little grass frog, smallest species in North America. More sporadic are the raspy quack of the squirrel tree frog and the irregular chortling and chuckling of the leopard frog.

As we stand listening to this amphibian symphony, another voice calls above it: tonight's soloist. "Ah," says Zweifel. I can hear him smiling, even in the dark. "My toad."

All of the calls we have heard this evening, despite their variety, have been made up of short notes, each lasting less than a second before repeating. That of the southern toad is a long, baritone trill of four, five, even six seconds — a rich, raspy note, like a bassoon and an oboe together. As we shine our lights around the pond, little orange toad eyes shine back at us from everywhere. The toad calls again. A second joins him, then another. All three

are calling from somewhere on the other side of the pond, too far away to record.

"I wish some of the ones on this side would speak up," says Zweifel. "I don't think we can get around to those three very easily."

We stand listening, brushing away the moths and mosquitoes that swarm around us because of the flashlights. Eventually we just turn them off and stand in the dark. All around us frogs are singing, chortling, chirping, barking. But only three toads offer their baritone accompaniment. Finally we try to walk to them, splashing and mucking through the soft, flooded ground. What looks like dry ground to the flashlight keeps giving way with a squish. The leopard frogs chuckle their eerie laugh. We should have webbed feet, I think. Then the dry ground disappears altogether, and the water spreads out before us and around both sides like a moat.

Zweifel looks across this obstacle and sighs, then bats away a moth in frustration. The toads are still too far away, and it sounds as though they may be in the middle of the pond anyway. None of the others are giving any sign of joining the chorus, so he shrugs and we abort the mission. Turning back, we hop from illusory dry spot to dry spot until we reach the car.

Because we are so close to the cabins it is only a short drive back. Once there, with the car engine turned off, we can still hear the toads calling in the near distance. Zweifel chuckles at the irony, but points out that no new ones have joined in. We could spend the night out there with a tape recorder and get nothing more than mosquito bites. There will be other opportunities.

— Stanton G. Orser

(This is the second of a two-part article.)

Sun

Mon

Tue

Wed

Thu

Fri

Sat

October 1983 American Museum of Natural History

The American Museum Restaurant provides a cool, quiet dining area with a greenhouse atmosphere. The menu is varied and moderate in price, and children can eat a whole meal for less than \$3.50. Members receive a 10% discount (excluding alcohol). For information or reservations call (212) 874-3436.

1 1:00-4:30 p.m. Caribbean Month — Dominican Republic. Raizes-Traditional Music and Dance; and Roots of Folkloric Traditions with Francisco Chapman. Leonhardt People Center. Free.

2 1:00-4:30 p.m. Caribbean Month — Dominican Republic. Raizes-Traditional Music and Dance; and Roots of Folkloric Traditions with Francisco Chapman. Leonhardt People Center. Free.

3

4 7:00-9:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507.

Moon is at perigee (nearest the earth)

5 7:00 p.m. 1983 Audubon International Environmental Film Festival. Auditorium. Free. (See article page 2.)

6 9:00-11:00 a.m. Bird Walk in Central Park. For info call (212) 873-7507.

7 8:00 p.m. NY Microscopical Society. Room 419. Free.

8 1:00-4:30 p.m. Caribbean Month — Haiti. Traditional Haitian Dance featuring Jean Leon Destine; and Oral Tradition and Folktales with Marie Lourdes Elgieus. Leonhardt People Center. Free.

3:00 p.m. Haitian Dance featuring Troupe Shango. Kaufmann Theater. Free.

Discovery Tour leaves for Papua New Guinea. For information call (212) 873-1440.

9 1:00-4:30 p.m. Caribbean Month — Haiti. (See listing for Saturday, October 8.) Leonhardt People Center. Free.

10 Columbus Day (Museum open)

11 7:00-9:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507.

12 7:00 p.m. 1983 Audubon International Environmental Film Festival. Auditorium. Free. (See article page 2.)

13 9:00-11:00 a.m. Bird Walk in Central Park. For information call (212) 873-7507.

14 Full Moon

15 2:00 and 3:00 p.m. Development and Evolution of Contemporary Puerto Rican Art. Linder Theater. Free.

2:00 p.m. NY Shell Club. Room 419. Free.

3:00 p.m. Troupe Shango: Haitian Dance. Kaufmann Theater. Free.

Discovery Tour leaves for Greece and the Greek Isles on the clipper ship Sea Cloud. For information call (212) 873-1440.

16 2:00 and 3:00 p.m. Development and Evolution of Contemporary Puerto Rican Art. Linder Theater. Free.

17 Afternoon and Evening Lecture Series begins today. (See article page 1.)

19 7:30 p.m. Ron Roach Caribbean Ensemble. Auditorium. Free. (See article page 10.)

20 2:00 p.m. Whales and Other Sea Mammals. Gallery Talk with S. Bufum. Assemble at first floor Information Desk. Free.

21 Full Moon

22 1:00-4:30 p.m. Caribbean Month — Cuba. Impact of Yoruban Culture on the Development of Cuban Music with Marie Guiradino; an Anthology of Cuban Music with Marco Rizo. Leonhardt People Center. Free.

1:00-4:30 p.m. Caribbean Month (See listings for Saturday, Oct. 15.) Leonhardt People Center. Free.

1:30 and 3:30 p.m. Once Upon a Woodwind. Kaufmann Theater Members' Program. (See article page 4.)

2:00 p.m. NY Paleontological Society. Room 126. Free.

23 1:00-4:30 p.m. Caribbean Month — Cuba. (See listing for Saturday, October 22.)

25 8:00 p.m. Met Groto; National Speleological Society. Room 129. Free.

26 7:30 p.m. An Evening with Isaac Asimov. Special Members' Program. Auditorium. Reservations required. (See article page 3.)

30 1:00-4:30 p.m. Caribbean Month — Trinidad/Tobago. Tnn-Artist. Traditional Dance and Music. Leonhardt People Center. Free.

31

27 2:00 p.m. The Mandan and Hidatsa Indians. Gallery Talk with P. Santiago. Assemble at first floor Information Desk. Free.

8:00 p.m. NY Microscopical Society. Room 419. Free.

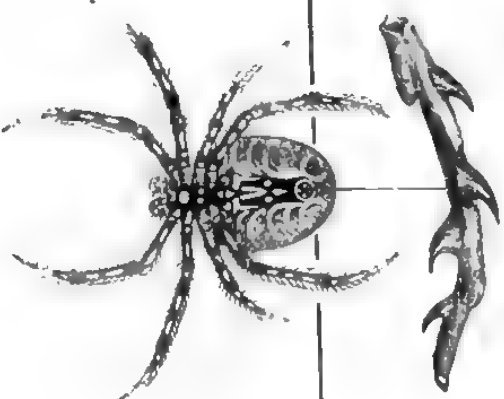
125th Anniversary of Theodore Roosevelt's birth.

28 Last Quarter (half moon)

29 1:00-4:30 p.m. Caribbean Month — Trinidad/Tobago. Tnn-Artist. Traditional Dance and Music. Leonhardt People Center. Free.

1:30, 3:30 and 7:30 p.m. Spirit Stories from Around the World. Kaufmann Theater. Reservations required. (See article page 4.)

Daylight Savings Time ends. Set clocks back one hour.



ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol 8, No 9 November 1983



Gary Randorf

The Land Nobody Knows

Wednesday, November 30, 7:30 p.m. Auditorium
\$3.00 for Members, \$6.00 for non-members

The Adirondacks is the largest park in the United States. Its six million acres encompass rolling hills and alpine summits, northern hardwood forests, and open marshlands. The headwaters of the Saint Lawrence and Hudson rivers lie within its boundaries among 30,000 miles of rivers and streams feeding thousands of ponds and lakes. Bears still roam its woods, startled beavers slap their tails to warn off intruders, and the cry of the loon commonly pierces the silence of backcountry lakes.

The Adirondacks is also a land of ironies. It is within a day's drive of fifty-five million people, yet it has often been called "the land nobody knows." And while it is one of the best protected parks in the United States, it is also one of the areas most threatened by acid rain.

Members are invited to learn more about this remarkable region at our November Members' program, when Dr. Anne LaBastille presents *The Adirondacks: The Beauty and the Peril*. Using beautiful slides, Dr. LaBastille will take members on a tour of this magnificent area, describing its diverse ecological zones and the plants and animals that inhabit its terrain. She will explain how humans have used the park in the past and how it is being used today. Then, she will take a look at the catastrophic effects of acid rain on the entire ecological balance of the region and what this portends for the future. More than 200 once pristine and abundant lakes have already lost their entire fish populations.

A writer, ecologist, and professional Adirondack guide, Dr. LaBastille makes her home in these mountains

and is well versed in their lore. She has hiked and camped over hundreds of miles of the region, becoming acquainted with the local residents and their concerns about preserving this valuable resource. She has won the gold medal for conservation awarded by the Worldlife Fund and serves as a juror for the J. Paul Getty Wildlife Conservation Award.

This program is presented in cooperation with the Adirondack Council. Please use the coupon on page 2 to order tickets

Upper Dug Mountain Pond in the
Adirondack Park

Exceptional Gems

Three stunning gems — a three-century old carved emerald called "The Mogul", an almost flawless emerald crystal from Colombia, and a rare Burma ruby — are on exhibit in the Morgan Hall of Gems through Friday, January 13

Eye on Cuba

A decade of documentary films, covering music and dance, art, and politics, will be presented in two evenings at the Cuban Film Festival
Page 5

Blacks and Indians

Hundreds of enslaved blacks who escaped their bondage before the Civil War were welcomed as friends and neighbors by the Indian tribes. Join William Loren Katz as he discusses the relationship between Blacks and Indians on the American Frontier
Page 2

Folder's Frolic

The ancient art of paper folding will be taught by volunteers from the Friends of the Origami Center of America at Membership's Sixth Annual Origami Workshop. The Origami Holiday Tree will be on display starting November 21
Page 3

Members' Memo Taking You to the World

A visit to the Museum can be like a trip around the world. Walking through our halls, you can be staring at zebras grazing on an African plain one moment and inspecting a Chinese wedding chair exquisitely inlaid with kingfisher feathers the next. Our programs allow you to experience the haunting music of the Andes, marvel at the delicacy of an Indonesian dancer, or discover the hidden world of Asian gypsies.

Since the Museum brings the world to you in so many ways, it is only natural that we should also take you to the rest of the world. We provide this opportunity through our Discovery Tours program which allows members to travel to some of the world's most exotic areas. In 1984, the Discovery Tour program includes seven cruises and six land programs over five continents to such remote sites as Mendi in Papua New Guinea and Mt. Karsimbi in Rwanda. The tours are led by Museum scientists and other experts who have done research in the areas and who are able to provide fresh perspectives on the lands and their people.

They take participants not only to the major tourist attractions but also to the little known sites which most people never see. The Museum also uses the vast network of friends it has made throughout the years, which has led to some extraordinary experiences. In 1983, the Queen of Thailand greeted one of our groups and entertained them at the Royal Palace!

One of the most exciting trips of 1984 is the "Oriental Passage." If you signed up for this tour, in a few months you would arrive in Sri Lanka and take a morning drive to Sigiriya, a 640-foot-high natural rock formation that features beautiful pastel frescos. A week later, you would be aboard the luxury ship *Illiria*, heading for the Andaman Islands, an archipelago of 200 islands lying in the Bay of Bengal. Once on land, you could enjoy a beach barbecue or go on a snorkeling expedition with C. Lavett Smith from the Department of Ichthyology. From there, it is on to recently opened Burma and the city of Pagan, one of the great imperial centers until its fall to the Kubliha Khan in

1287. Then you can hook up with the "Indonesian Odyssey". The journey continues to one fabulous place after another: Jogjakarta, site of Indonesia's largest temple complex; Komodo, home of the 200 pound and 10 foot long Komodo Dragon; Butung, a former pirates' haunt; and finally Bali where you would see a traditional Barong dance and visit the village of Bali's most renowned wood carvers.

Other tour highlights for the 1984 season are a Papua New Guinea Adventure (and a chance to see the magnificent birds of paradise), a cruise up the entire navigable length of the Nile, a Galapagos Island Cruise, an art tour of Tibet and China, and a land program to view Alaska's teeming wildlife. For more information about these and other tours, please call the Discovery Tours office at (212) 873-1440. They will be glad to send you brochures and information about the tour of your choice.

Henry H. Schulson

Blacks and Indians

Wednesday, November 16, 7:00 p.m. Auditorium. Free.

During the slave era, hundreds of blacks escaped their bondage on Southern Plantations and found refuge and friendship among Indian tribes from Rhode Island to California. Forming settlements alongside the Indian villages, several former slaves actually became chiefs of their adopted nations. It is estimated that one third of Black Americans have Indian blood, including such notables as Lena Horne and Frederick Douglas.

William Loren Katz, author of *The Black West*, will discuss this little known aspect of American History in a slide illustrated lecture on *Black Indians: The Hidden Connection*. He will describe how Blacks and Indians intermarried, raised and educated families, tended crops and cattle together and forged military alliances. He will tell the stories of Black Indians such as John Cohla, a chief of the Seminoles, who attempted to negotiate treaty terms with President Polk in Washington to end thirty years of bloodshed in the Seminole Wars.

William Loren Katz is the author of more than twenty books on blacks and minori-



ties. He has done extensive research on the role played by Black Americans in settling the frontier, a role previously ignored in history books. He has taught at Columbia University, N.Y.U., and U.C.L.A.

Sponsored by the African American Program of the Department of Education, the program is free to all Museum visitors. For more information, please call (212) 873-1300, ext. 514.

ROTUNDA

ISSN 0194-6110

Vol. 8, No. 9
November 1983

Henry H. Schulson — Manager of Membership Services
Barbara Sawicz — Associate Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Alan P. Temes — Editorial Advisor
Kim Hamilton — Editorial Assistant
Marion Halberg — Editorial Assistant

Rotunda, a publication for Participating, Donor, and Contributing Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y. 341

Printed by Waldon Press, Inc., New York

Statement of ownership, management and circulation. Title of publication: *Rotunda* (ISSN 0194-6110). Date of filing: October 1, 1983. Frequency of issue: Monthly except bi-monthly May/June and July/August. Number of issues published annually: 10. Annual subscription price: \$3.00. Complete mailing address of known office of publication: Central Park West at 79th Street, New York, NY 10024. Complete mailing address of the headquarters or general business offices of the publishers: Same. Publisher: L. Thomas Kelly. American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Managing Editor: None. Owner: American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Known bondholders, mortgagees, and other security holders: None. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes has not changed during the preceding 12 months. Extent and nature of circulation: (1A) signifies average number of copies of each issue during preceding 12 months and (1B) signifies actual number of copies of single issue published nearest to filing date. Total number of copies: (A) 38,900 (B) 38,000. Paid circulation through sales through dealers and carriers, street vendors and counter sales: (A) None (B) None. Mail subscription: (A) 21,344 (B) 22,913. Total paid circulation: (A) 21,344 (B) 22,913. Free distribution by mail: (A) 17,256 (B) 14,787. Total distribution: (A) 38,600 (B) 37,700. Copies not distributed: (A) 300 (B) 300. Return from news agents: None. Total: (A) 38,900 (B) 38,000. I certify that the statements made by me above are correct and complete. (Signed) Henry H. Schulson, Acting Editor.



Gary Rand

The Adirondacks, Wednesday, November 30. Participating, Donor and Contributing Members are entitled to six tickets at the Members' price of \$3.00. Associate Members are entitled to one. All other tickets are \$6.00.

Number of Members' tickets _____ X \$3.00 \$_____
Number of additional tickets _____ X \$6.00 \$_____
Total amount enclosed: \$_____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Daytime Phone: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: **The Adirondacks**, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Social Climbers

Thursday, December 15, 7:30 p.m. Auditorium
Free and open only to Members.



What New Yorkers live in the most elegant apartment buildings, eat in the best restaurants, ride in buses, subways, and even in limousines, only come out at night, and are among the most widely recognized residents of the city? They have been around since the dinosaurs, and arrived here with the first settlers from Europe. Although living in New York now is tougher than it was then, they continue to thrive.

Members and their guests are invited to join Dr. Betty L. Faber, research associate in the Department of Entomology, for a slide lecture in which she will discuss aspects of her studies on the behavior of cockroaches. The German cockroach is the dominant one in New York, having immigrated here at least a century ago. But it is the slightly larger American cockroach that Dr. Faber has studied at the American Museum for the past eight years. In a rooftop greenhouse next to her office she observes a colony of two to three hundred wild roaches, many of which carry a numbered piece of adhesive tape on their backs. By labeling the

Off to the races? No, this American Cockroach has been tagged for Betty Faber's research on cockroach behavior.

animals Dr. Faber is able to keep records of the lives of individuals, observing and recording their movements, eating habits, reproductive cycles, and lifespans. She will explain how the animals interact and survive in this protected environment, where no exterminators are allowed. In addition, she will talk about some of the more interesting and beautiful (believe it or not!) cockroaches from other parts of the world.

Members are invited to come early to look at some special displays that will be set up outside the Auditorium. Dr. Faber and her associates will be available to talk about the displays, which will include the hissing Madagascar cockroach and several other exotic species, and demonstrations of various cockroach behaviors

Cockroaches. Thursday, December 15. This program is open only to Members of the Museum and their guests. Participating, Donor and Contributing Members are entitled to six free tickets. Associates are entitled to one. Additional tickets may be purchased at \$4.00 each.

Please send me _____ tickets

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Cockroaches, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Sixth Annual Origami Workshop

Saturday, December 3, School Lunchrooms
Free and open only to Members.

Members are once again invited to perform feats of paper magic at our Sixth Annual Origami Workshop. Origami is the ancient art of paper folding. This year nimble-fingered participants will learn how to transform squares of paper into butterflies, barking dogs, Japanese cranes, Baggi's shelf ornaments, and perhaps even a strawberry. We will also have workshops especially geared for children six and under. Junior folders will create jumping frogs and a box for them to jump into, and sailboats, swans, and candy canes.

All workshops will be led by volunteers from the Friends of the Origami Center of America. These are the same people who create the wonderful Origami Holiday tree that graces the Roosevelt Rotunda each winter. This year the tree will be on display from November 21 through January 8.

No experience is necessary and all materials will be provided. In addition, workshop

participants will receive an Origami workbook so they can practice their folds at

home. To register, please use the adjacent coupon. Early registration is strongly advised.

Members' Origami Workshop, Saturday, December 3
I would like to register for the time marked below. (Please indicate a first, second and third choice of times.)

10:30 a.m.
2:30 p.m.

11:30 a.m.
3:30 p.m.

1:30 p.m.

Number of People for Regular Workshop:
Number of Adults and Children for Young Children's Workshop (ages four to six):
(Children must be accompanied by an adult.)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to: Origami Workshop, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

Behind-the-Scenes: Herpetology

Thursday evening, November 3, or Sunday, November 6
\$6.00 and open only to Members.

Scientists in the Department of Herpetology are conducting some of the Museum's most exciting scientific research. Their work ranges from genetic studies of an all-female species of lizard to research on a brightly colored South American frog that secretes one of the strongest known animal poisons. Members are invited to learn more about the department's research and collections in a Behind-the-Scenes Tour this November.

The tour will take you to research laboratories and storage areas that are never open to the general public. There you will meet scientists and technicians who will describe the scientific work in progress and show you specimens from one of the world's finest herpetological collections. There will also be demonstrations of how amphibians and reptiles are collected and prepared for scientific use. Refreshments will be served at the conclusion of the tour.

The tour is open only to Participating, Donor, and Contributing Members of the Museum. It was originally featured in the October issue of *Rotunda* and as of press time a limited number of spaces

still remained. For information and reservations, please call the Membership Office at (212) 873-1327

Red-throated anolis lizards, snakes, and frogs will be on display in the Members' Tour of Herpetology



Dinosaur Jamboree

Sunday, November 20, Kaufmann Theater
11:30 a.m., 1:30 and 3:30 p.m.
Sold Out From Previous Issue



From the Greek words *deinos*, for "terrible," and *sauros*, for "lizard," the English word dinosaur was derived for the giants who roamed the earth 140 million years ago. Young members, ages ten and under, will have an opportunity to learn more about these fascinating creatures in a program of original music and song by performer Michele Valeri.

Ms. Valeri will sing of Paleontologist Professor Jones digging for dinosaur bones in Texas; *Stella Stegosaurus*, who is built like a tank; and *Tyrannosaurus Rex*, stalking his prey in the jungle. The antics of these characters will be enhanced through Ms. Valeri's colorful, whimsical puppets, who bring the *Leaping Lizards* and the *Hadrosaur* from Hackensack to life. They will be accompanied by musician Mike Stein.

Michele Valeri is a teacher, singer, guitarist, and recording

Ichthyosaurus and plesiosaurus. Join dinosaurs from all over for a program of music and song about their life and times

artist with an appealing repertoire for children of all ages. She has performed at Wolf Trap and the White House, and produced an acclaimed children's record, "*Mi Casa Es Su Casa*," a bilingual journey through Latin America.

Mike Stein is a bluegrass musician who plays the fiddle, banjo, and other instruments. He coauthored many of the songs on this program and is an accomplished yodeller.

Dinosaurs Are Forever was originally advertised in the October *Rotunda*. As of press time a limited number of tickets were still available.

Dinosaurs Are Forever, Sunday, November 20. Participating, Donor and Contributing Members are entitled to six tickets at the Members' price of \$2.00. Associate Members are entitled to one. All other tickets are \$4.00.

Number of Members' tickets	X \$2.00	\$	—
Number of additional tickets	—X \$4.00	\$	—
Total amount enclosed:		\$	—

Please indicate a first and second choice of times:
11:30 a.m. _____ 1:30 p.m. _____ 3:30 p.m. _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Membership category: _____

Daytime Phone: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Dinosaurs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Sumerian Epic

Wednesday, November 16, 8:00 p.m. Kaufmann Theater
Sold Out From Previous Issue

The ancient Sumerians, inhabitants of the alluvial valleys of the Tigris and Euphrates rivers, developed the cuneiform, or wedge-shaped, system of writing. Among the thousands of clay tablets inscribed in cuneiform still extant are literary works that reveal the religious beliefs, ethical ideas, and spiritual aspirations of this ancient people.

From the clay tablets comes the oldest recorded story known — the cycle of Inanna, Queen of Heaven and Earth. Born of divine parents, Inanna descended to Earth to await her womanhood and assume her crown as Queen of the Land of Sumer. She received her power from the resources and fertility of the land. To complete her destiny, she gave up her earthly powers and cast herself into the

underworld, only to be reborn into the sky as Goddess of the Morning and Evening Star, of Love and Procreation.

In this special Members' Evening Program, storyteller Diane Wolkstein will retell the story of Inanna in all her aspects — as woman, lover, wife, seeker, ruler, and the source of all fertile power. The premiere of an original musical score, composed and performed by Geoffrey Gordon, will accompany Ms. Wolkstein's re-creation of the cycle of Inanna.

Diane Wolkstein has been a featured storyteller at festivals, libraries, universities, and museums for the past fifteen years. The author of eleven books, she also has made four recordings. Her most recent book, coauthored with Samuel Noah Kramer, is *Inanna, Queen of Heaven and Earth*,

published this year.

Geoffrey Gordon has composed original scores for a variety of dance and theater ensembles, including several based on ancient cultures in Tibet and Central America. As a performer he specializes in playing unusual percussion instruments from many countries.

This program is presented by the Membership Office in cooperation with the C G Jung Foundation for Analytical Psychology. It is made possible in part with support from Poets and Writers Inc., which is funded by the Literature Program of the New York State Council on the Arts. This program was originally advertised in the October issue of *Rotunda*. Please call (212) 873-1327 for ticket availability and information.

Harlem on My Mind

Wednesday, November 30, 7:00 p.m. Kaufmann Theater
Free

Following World War I, during the roaring twenties and into the Great Depression, there was a flowering of black culture of special vitality and spirit that inspired notable achievements in art, drama, films, theater, music, and political thought. The center of this creativity was Harlem, where the best jazz in town was provided by talents such as Duke Ellington and Josephine Baker, and literature flourished with poets and writers like Langston Hughes and Countee Cullen. Dozens of clubs and cabarets provided floor shows and revues that attracted the wealthy from midtown Manhattan.

A presentation by Ernest Smith and Howard E. Johnson, the *Harlem Renaissance*, will explore this golden age and its impact on American culture, using slides, original recordings, and archival



Cab Calloway

films of artists such as Ethel Waters, Cab Calloway, and Eubie Blake.

Ernest R. Smith is a collector of archival films, slides, and ephemera on jazz and

jazz dance. He co-authored *The Black Book*, a history of black culture from slavery to World War II.

Howard E. Johnson, Associate Professor in Sociology at the State University of New York at New Paltz, was once a singer and dancer in the Duke Ellington Revue at Harlem's famous Cotton Club. He collects films and recordings concerning the sociology of black studies.

On December 7, the two men will offer an additional lecture on the *Cotton Club Era*. These programs are presented by the African-American Program of the Department of Education, and are free to all Museum visitors. Seating will be on a first-come, first-served basis, and Members are advised to arrive early to avoid disappointment. For further information, please call (212) 873-1300 ext. 514.

Trash or Treasures?

Saturday, November 5, 2:00 to 5:30 p.m.
Roosevelt Rotunda, Free

Remember that bleached bone you found on an outing at the beach? Or how about the rock you picked up in Central Park that looked like a fossil? Here's your chance to find out what these small treasures really are. Bring them to Identification Day at the Museum and let one of our scientists identify them.

Staff members from the departments of Invertebrates, Entomology, Vertebrate Paleontology, Mineral Sciences, and Anthropology will be on hand to answer your questions and show you some interesting examples of their own treasures. People of all ages are welcome, along with their rocks, shells, insects, fos-

sils, feathers, pottery, minerals, bones, and fabrics (but no gemstones, please!).

Identification Day is free to all Museum visitors. The program is made possible in part by a grant from the Helena Rubenstein Foundation. For further information, please call the Department of Education at (212) 873-1300, ext. 566.

Museum Notes

Special Exhibitions

1983 Origami Holiday Tree. November 21 through January 8, 1983, in the Roosevelt Rotunda, second floor. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jellyfish and much, much more. A delight for both children and adults.

South of Winter. Through November 30 in the Birds of the World Hall. A photographic exhibition of works by Steven C. Wilson and Karen C. Hayden. These photographs of the coastal wildlife of the Southern United States begin a national tour here.

African Textiles. Through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses, wrapping for the dead, masks, puppets, and clothing.

Francis Lee Jaques: Artist-Naturalist. Through January 8, 1984. Akeley Gallery. This exhibit features this artist's pioneering work in the realm of wildlife habitat diorama design. This master of realist imagery translated the essence of a living environment, through light, space, and atmosphere, to habitat formations on two-dimensional murals.

December at the Museum

India Month. Leonhardt People Center. Weekends from 1:00 to 4:30 p.m.

Members' Origami Workshop. Saturday, December 3. Reservations required.

The Cotton Club Era. Wednesday, December 7 at 7:00 p.m.

Cockroaches. Thursday, December 15, at 7:30 p.m.

Anthology of Cuban Music. Saturday and Sunday, December 10 and 11 at 3:00 p.m.

Bloomingdale Concert. Sunday, December 18 at 3:00 p.m.

Planetarium Events

Cosmic Mysteries. Through November 20.

Are UFOs visitors from the stars? Could the extinction of the dinosaurs millions of years ago have a cosmic connection? What will be the ultimate fate of our universe? *Cosmic Mysteries* explores these and other fascinating questions, the answers to which have been eluding science.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.

Saturday: 11:00 a.m., and

hourly from 1:00 to 5:00 p.m.
Sunday: hourly 1:00 to 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.75 for adults, \$1.50 for children. For non-Member prices call 873-8828.

The Spirit of Christmas. November 25 through January 2, 1983. This year, utilizing the Hayden Planetarium's new computer automation system, we present the Spirit of Christmas, featuring more music and beautiful visuals than ever before.

Weekdays: 1:30 and 3:30 p.m.

Saturday: 11 a.m. and hourly from 1:00 to 5:00 p.m.
Sunday: hourly from 1:00 to 5:00 p.m.

The Planetarium is closed Thursday, November 24 for Thanksgiving. The Spirit of Christmas will be featured at 11:30 a.m., 12:30, 2:30 and 4:30 p.m. on Friday, November 25. Additional shows will be added Christmas week, December 25 to January 2, 1983.

Programs and Tours

Museum Highlights

Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Saturday, from 10:30 a.m. to 12:30 p.m., and 1:30 p.m. to 4:30 p.m. The Center is closed Sundays and Mondays.

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater: (212) 496-0900. Currently the films are

To Fly!, a history of American aviation complete with barnstorming in the Midwest, ballooning over Niagara Falls, and hanggliding off volcanic cliffs in Hawaii

Living Planet, an overview of the evolution of life from a drop of water to the technological achievements that gave rise to New York City and space exploration.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m.
Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the Food Express, in the basement. Members receive a 10% discount.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$6.00 for cars, \$7.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays, Sundays and most holidays: noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Native American Film Festival

Saturday, November 12 and Sunday, November 13, 11:00 a.m. to 5:00 p.m.
Kaufmann Theater. Free.



Joseph Kawaky

A weekend of recent documentary films about Native peoples throughout the Americas will be shown at the American Museum of Natural History as part of the Museum of the American Indian's annual *Native American Film and Video Festival*. Focusing on both traditional ways and contemporary concerns, the films use a variety of treatments and represent many viewpoints and voices. Ethnographic films from a recent project of Mexico's *Instituto Nacional Indigenista* portray aspects of Native communities in detail. *Tule Technology*, produced by the Smithsonian Institution's Department of Folklife, documents traditional techniques for using the tule reed to make houses, decoys and boats.

Among the topics explored in the weekend's programs is spirituality in Native American life. *Haa Shagöön* by Joseph Kawaky documents a sacred peace ceremony held by the Chilkoot Tlingit, presented from the viewpoint of one elder, the sponsor of the ceremony. In *The Great Spirit Within the Hole*, by Chris Spotted Eagle, interviews with Native Americans in prison demonstrate the impact of traditional spiritual practices. Peter Raymont's *Arctic Spirits* looks at the rise of Christian fundamentalism among Inuit people, examining both missionary work and the relation of fundamentalist practices to shamanistic tradition.

The impact of the exploitation of natural resources on the survival of Native peoples is the subject of *The Probable Passing of Elk Creek*. The film

Tlingit Indian elders assemble for a sacred peace ceremony which is documented in the film, *Haa Shagöön*.

documents the change and disruption brought about by the construction of a dam on the Grindstone Reservation. *Four Corners: A National Sacrifice Area?* Investigates the energy resources issue in the American Southwest through the various viewpoints of industry, government and Native American communities of the area.

Sponsored by the Museum's Department of Education in cooperation with the Museum of the American Indian, the festival is free to all Museum visitors. Seating is on a first come, first served basis so members are advised to arrive early to avoid disappointment. The festival will continue on the weekend of November 19 and 20 with video screenings at the American Indian Community House. For a complete schedule call the Museum of the American Indian at 212-283-2420 or the Museum's Department of Education at 212-873-1300 ext 559.

Members' Tour of the Month The Art of Francis Lee Jaques



Francis Lee Jaques

Members' Tour: The Art of Jaques. This Tour is free and open to Participating Donor, and Contributing Members of the Museum. Please indicate a first and second choice of times.

Friday, December 2 at 7:00 p.m.
Sunday, December 4 at 11:00 a.m.
Wednesday, December 7 at 7:00 p.m.
Saturday, December 10 at 11:00 a.m.
Sunday, December 11 at 11:00 a.m.
Wednesday, December 14 at 7:00 p.m.

Number of people.

Name

Address.

City:

State.

Zip

Daytime Phone

Membership category:

Please mail with a self-addressed stamped envelope to: *The Art of Jaques*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes on November 21.

The November tour will offer an overview of the work of diorama artist Francis Lee Jaques. Jaques worked at the Museum for 18 years and was instrumental in creating the look of the habitat groups as we know them today. His interest in "the shape of things" and his talent as both naturalist and artist made him one of the leading museum artists of his day.

The tour will include visits to the Hall of Asiatic Mammals and the Hall of Ocean Life, as well as the Hall of African Mammals, where Jaques painted the Bongo group. In the Hall of North American Forests, participants will become familiar with Jaques's Innovative Olympic Forest Group. A magnificent example of Jaques's overall concept of museum design will be seen as the tour proceeds to the Hall of the Birds of the Pacific, where the artist painted all the backgrounds and the huge ceiling dome. Finally, Members will view examples of Jaques's easel paintings and scratchboard drawings in the special exhibit installed in the Akeley Gallery.

All tours are led by volunteers of the Museum's Highlights Tours Program. To register use the adjacent coupon.

Audubon, Fuertes, and Jaques

John James Audubon, Louis Agassiz Fuertes, and Francis Lee Jaques are among the most well-known and respected of natural history artists. All three are particularly remembered for their portrayals of birds. Audubon's magnificent folio, *The Birds of America*, is world famous. Fuertes's ability to capture the personality of a living bird on canvas was extraordinary. Jaques, an innovator in the

design of museum habitat groups, was a master at placing a bird within its environment. In this series of Monday evening lectures, participants will learn more about these influential artists' work.

On November 7 Michael Harwood and Mary Durant, authors of *On the Road with John James Audubon*, will discuss Audubon's life and work. On November 14, art historian and naturalist Robert

McCracken Peck will discuss the work of Louis Fuertes. Mr. Peck is the author of *A Celebration of Birds: The Life and Art of Louis Agassiz Fuertes*. And on November 21, Stephen C. Quinn of the Museum's Exhibition Department will highlight the work of Jaques, including the remarkable dioramas he painted for the Museum. For information, please call the Department of Education at (212) 873-7507.

A Natural Fusion

Wednesday, November 9, 7:30 p.m. Kaufmann Theater. Free.

The sounds of chirping crickets, rustling leaves, human heartbeats, and singing birds will blend with the musical styles of East and West when Mitchell Korn performs compositions from his new album, "The Natural Sciences." The compositions reflect Mr. Korn's view of nature as a musical instrument and his interest in the color, texture, and environment of sound.

Mr. Korn's music is a unique combination of such diverse elements as Delta blues, the haunting melodies and rhythmic patterns of Eastern music, the spontaneity of American jazz, the clarity and harmony of classical music. He has made use of electronic sounds and tape recording from nature in many of his pieces, often combining them with unusual percussion instruments.

Mr. Korn has performed in concert halls throughout the United States. He has studied with such notable musicians as jazz trombonist Roswell Rudd and Indian composer and sitarist Ravi Shankar. Sponsored by the Department of Education, the program is free to all Museum visitors. For more information, please call the Education Department at (212) 873-1300 ext. 559.

Give the Museum for the Holidays



Open our doors to your friends and family this holiday season with a gift of membership. Let them share in what promises to be one of the most exciting years in the Museum's history. Next year, we will open a landmark exhibition on human evolution. We will also present *Asante: Kingdom of Gold*, exclusively loaned to us from the British Museum (Museum of Mankind), and an exhibition on the exotic trade goods that flowed between the East and West for over 2,000 years. Members will have the opportunity to attend special openings and programs for these and other events.

As a holiday benefit, Members may give gift memberships at savings of more than 30%. That's just \$12 for an Associate Membership and only \$24 for a Participating one. Once we receive your order, we will send you a beautiful greeting card to announce your gift.

A Museum Membership is the perfect gift because it can be enjoyed throughout the year. Give a gift today and look at all you will be giving in the year to come:

Associate Membership (\$18 but \$12 for you!)

- *Natural History* magazine for a full year
- Free admission to the Museum
- Half-price tickets to the *Naturemax Theater* (one per show)
- Discounts at the Museum shops and the American Museum Restaurant
- Access to the Members' Lounge

Participating Membership (\$35 but \$24 for you!)

- All of the above, plus...
- Free admission to the Museum for the family
- *Rotunda*, the Museum's newsletter
- Half price tickets to *Naturemax* (six per show)
- Discounts on Education Courses and at Planetarium sky shows
- Behind-the-Scenes Tours
- Members-only family and evening programs
- Special viewings of exhibitions

YES! A Gift of Membership is a wonderful idea.

Please enroll the following as:

____ Associate Member (\$12 at the Members' Discount)

____ Participating Member (\$24 at the Members' Discount)

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

This membership is a gift from:

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Membership category: _____

____ Enclosed is my check payable to the American Museum of Natural History

____ Please charge my _____ Mastercard _____ American Express Card _____ Visa Card

card no. _____

expires _____

signature _____

____ Please bill me after the holidays

Save time and order by calling our toll free number: (800) 247-5470

Cuban Film Fest

Wednesdays, November 2 and 9, 7:00 p.m. Auditorium. Free.

The emotions that moved an entire nation over a century of revolution are recalled by Cayita Araujo, a ninety-six year old Cuban woman in Luis Felipe Bernaza's film *Cayita: Leyenda y Gesto*. Cayita's stories provide a first-hand account of the struggles and history of the Cuban Republic from Marti to Castro. Her viewpoint is one of many which will be represented in the Museum's Cuban Film Festival.

Also included in the films to be shown on November 2 is *Controversia*, by Rolando Diaz. It uses a popular form of music to structure a humorous and ironic argument around the subject of machismo and women's role in Cuba today. Bernaza captures another fascinating film portrait in *Pedro Cero por Ciento*, the story of Pedro Acosta, a dairy farmer in the Sancti Spiritus province, a witty, down-to-earth original who has never lost a cow to illness. The experiences of exiled children are explored in the film *Los Ojos Como Mi Papa*, in which the filmmakers Pedro Chaskel and Fedora Robles record the stories of the children's flight from other Latin American countries to Cuba.

On November 9 the screenings will feature Octavio Cortazar's *Hablando del Punto Cubano*, which uses verses from the well-known "Guantanamera" to build an appreciation of the *punto*, a peasant music threatened with extinction. *Panorama* is the third of Melchor Casal's performance films featuring the *El Conjunto Nacional de Danza*



Moderna, a retrospective collage of the diverse rhythms and dance forms that have evolved in Cuba. And *Arte del Pueblo*, by Oscar Valdes, documents the creative work in papier-mache done by residents of Juanelo in old Havana.

These are only a few highlights of the Festival, which is free and open to all Museum visitors. It is presented by the Caribbean Program of the Museum's Education Department.

Controversia will be one of the featured films in the Museum's Cuban Film Festival. It takes an often hilarious look at sexual roles in Cuba today.

For more information and a complete schedule, please call (212) 873-1300, ext. 514.

Discovering Puerto Rico

Saturday, November 19, 1:00 and 3:00 p.m. Kaufmann Theater. Free.

On November 19, 1493, Christopher Columbus discovered a small island in the Caribbean which he called San Juan. Years later the name was changed to Puerto Rico or "rich port." In celebration of the 490th anniversary of Puerto Rico's discovery, the multitalented Teatro Otra Cosa will present a lively program of Puerto Rican song, dance, comedy and drama.

The celebration will begin with dramatic and comic scenes illustrating the spirit and concerns of the Puerto Rican people. Then, accompanied by the fast paced beat of their percussion ensemble, Teatro Otra Cosa will immerse the audience in a rhythmic celebration of African/Caribbean folk dancing and singing. The troupe will perform such colorful dances as la bomba and la pena, and the audience will be invited to chant and clap along with the performers.

The Puerto Rican Discovery

Day celebration is free to all Museum visitors. Seating will be on a first-come, first-served basis so members are advised to arrive early. For more information, please call the Caribbean Program of the Museum's Department of Education at (212) 873-1300, ext. 514.



Celebrate Puerto Rican Discovery Day with Teatro Otra Cosa

Changing Perspectives

Thursday, November 10, 8:00 p.m. Auditorium. Free.

Westerners' view of people from vastly different cultures has changed considerably over the past fifty years. In this program Dr. Malcolm Arth, Chairman of the Museum's Education Department, will discuss how the work of filmmakers has evolved to give a more realistic portrayal of non-Western peoples. He will screen one of the hits of the Margaret Mead Film Festival, *A Zenana Scenes and Recollections*, by Jayasinhji Jhala and Roger Sandall. The film presents a fascinating glimpse into the lives of women in a royal palace in Gujarat, India, through the eyes of the Maharajah's wife. The Maharajah's son is one of the filmmakers. Short excerpts from some archival films will also be shown as Dr. Arth illustrates the changes

that have occurred in the filmmakers' methods.

The program is one of a series of events taking place throughout the City during November. In conjunction with an international conference on Communications, Technology and Traditional Cultures. The Museum's Department of Education is cooperating with the International League of Folk Arts for Communication and Education related to United Nations Development Concerns, and the La Mama Third World Institute of Theater Arts Studies in presenting this program.

The program is free to all Museum visitors. Please use lower Central Park West entrance. Seating will be on a first-come, first-served basis. For further information call (212) 877-2981.

Habana Melodies

Saturday, December 10 and Sunday, December 11 at 3:00 p.m., Kaufmann Theater
\$4.00 for Members, \$5.00 for non-members

The first typically Cuban song was heard in the streets of Santiago de Cuba at the end of the seventeenth century. Called *La Ma Teodora*, after the name of a popular street singer, it was the beginning of a fusion of traditions that would result in a new musical form. Over the next three centuries Spanish *guariras*, *canciones*, and *habaneras* became melded with black *bembes*, *tangos*, and *congos* to form the rhythms that would become characteristic of Cuban music. By the twentieth century, both Europe and the United States were dancing to the *rumba*, the *conga*, and the *mambo*.

The richness and beauty of this tradition will be presented

in a special program by the award-winning theatrical company, *Repertorio Español*. Entitled "Habana: Antologia Musical," it comprises forty songs that touch on a wide variety of styles and periods. Conceived and directed by Rene Buch, and sung by nine members of the company, the program includes popular songs, such as *Siboney* and *Mama Ines*, and selections from Cuban *zarzuelas* or operettas, such as *Maria la O* and *Cecilia Valdes*.

The performance is sponsored by the Caribbean Program of the Department of Education. Use the adjacent coupon to order tickets. For information, please call (212) 873-1300, ext. 514.

Habana Melodies, December 10 and 11. Participating, Donor and Contributing Members are entitled to four tickets at the Members' price of \$4.00. Associate Members are entitled to one. All other tickets are \$5.00.

Number of Members' tickets	X\$4.00	\$
Number of non-Member tickets	X\$5.00	\$
Total amount enclosed:		\$

Name _____

Address _____

City: _____ State: _____ Zip: _____

Membership category: _____

Daytime Phone: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Caribbean Programs, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

Members' Tour of the Month The Art of Francis Lee Jaques



Francis Lee Jaques

Members' Tour: The Art of Jaques. This Tour is free and open to Participating, Donor, and Contributing Members of the Museum. Please indicate a first and second choice of times.

Friday, December 2 at 7:00 p.m.
Sunday, December 4 at 11:00 a.m.
Wednesday, December 7 at 7:00 p.m.
Saturday, December 10 at 11:00 a.m.
Sunday, December 11 at 11:00 a.m.
Wednesday, December 14 at 7:00 p.m.

Number of people _____

Name _____

Address: _____

City: _____

State: _____

Zip _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed stamped envelope to: *The Art of Jaques*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes on November 21.

The November tour will offer an overview of the work of diorama artist Francis Lee Jaques. Jaques worked at the Museum for 18 years and was instrumental in creating the look of the habitat groups as we know them today. His interest in "the shape of things" and his talent as both naturalist and artist made him one of the leading museum artists of his day.

The tour will include visits to the Hall of Asiatic Mammals and the Hall of Ocean Life, as well as the Hall of African Mammals, where Jaques painted the Bongo group. In the Hall of North American Forests, participants will become familiar with Jaques's innovative Olympic Forest Group. A magnificent example of Jaques's overall concept of museum design will be seen as the tour proceeds to the Hall of the Birds of the Pacific, where the artist painted all the backgrounds and the huge ceiling dome. Finally, Members will view examples of Jaques's easel paintings and scratchboard drawings in the special exhibit installed in the Akeley Gallery.

All tours are led by volunteers of the Museum's Highlights Tours Program. To register use the adjacent coupon.

Audubon, Fuertes, and Jaques

John James Audubon, Louis Agassiz Fuertes, and Francis Lee Jaques are among the most well-known and respected of natural history artists. All three are particularly remembered for their portrayals of birds. Audubon's magnificent folio, *The Birds of America*, is world famous. Fuertes's ability to capture the personality of a living bird on canvas was extraordinary. Jaques, an innovator in the

design of museum habitat groups, was a master at placing a bird within its environment. In this series of Monday evening lectures, participants will learn more about these influential artists' work.

On November 7 Michael Harwood and Mary Durant, authors of *On the Road with John James Audubon*, will discuss Audubon's life and work. On November 14, art historian and naturalist Robert

McCracken Peck will discuss the work of Louis Fuertes. Mr. Peck is the author of *A Celebration of Birds: The Life and Art of Louis Agassiz Fuertes*. And on November 21, Stephen C. Quinn of the Museum's Exhibition Department will highlight the work of Jaques, including the remarkable dioramas he painted for the Museum. For information, please call the Department of Education at (212) 873-7507.

A Natural Fusion

Wednesday, November 9, 7:30 p.m. Kaufmann Theater. Free.

The sounds of chirping crickets, rustling leaves, human heartbeats, and singing birds will blend with the musical styles of East and West when Mitchell Korn performs compositions from his new album, "The Natural Sciences." The compositions reflect Mr. Korn's view of nature as a musical instrument and his interest in the color, texture, and environment of sound.

Mr. Korn's music is a unique combination of such diverse elements as Delta blues, the haunting melodies and rhythmic patterns of Eastern music, the spontaneity of American jazz, the clarity and harmony of classical music. He has made use of electronic sounds and tape recording from nature in many of his pieces, often combining them with unusual percussion instruments.

Mr. Korn has performed in concert halls throughout the United States. He has studied with such notable musicians as jazz trombonist Roswell Rudd and Indian composer and sitarist Ravi Shankar. Sponsored by the Department of Education, the program is free to all Museum visitors. For more information, please call the Education Department at (212) 873-1300 ext. 559.

Give the Museum for the Holidays



Open our doors to your friends and family this holiday season with a gift of membership. Let them share in what promises to be one of the most exciting years in the Museum's history. Next year, we will open a landmark exhibition on human evolution. We will also present *Asante: Kingdom of Gold*, exclusively loaned to us from the British Museum (Museum of Mankind), and an exhibition on the exotic trade goods that flowed between the East and West for over 2,000 years. Members will have the opportunity to attend special openings and programs for these and other events.

As a holiday benefit, Members may give gift memberships at savings of more than 30%. That's just \$12 for an Associate Membership and only \$24 for a Participating one. Once we receive your order, we will send you a beautiful greeting card to announce your gift.

A Museum Membership is the perfect gift because it can be enjoyed throughout the year. Give a gift today and look at all you will be giving in the year to come.

Associate Membership (\$18 but \$12 for you!)

- *Natural History* magazine for a full year
- Free admission to the Museum
- Half-price tickets to the *Naturemax Theater* (one per show)
- Discounts at the Museum shops and the American Museum Restaurant
- Access to the Members' Lounge

Participating Membership (\$35 but \$24 for you!)

- All of the above, plus...
- Free admission to the Museum for the family
- *Rotunda*, the Museum's newsletter
- Half price tickets to *Naturemax* (six per show)
- Discounts on Education Courses and at Planetarium sky shows
- Behind-the-Scenes Tours
- Members-only family and evening programs
- Special viewings of exhibitions

YES! A Gift of Membership is a wonderful idea.

Please enroll the following as:

____ Associate Member (\$12 at the Members' Discount)

____ Participating Member (\$24 at the Members' Discount)

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

This membership is a gift from.

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Membership category: _____

____ Enclosed is my check payable to the American Museum of Natural History

Please charge my _____ Mastercard _____ American Express Card _____ Visa Card

card no. _____

expires _____

signature _____

____ Please bill me after the holidays

Save time and order by calling our toll free number: (800) 247-5470

Museum Notes

Special Exhibitions

1983 Origami Holiday Tree. November 21 through January 8, 1983, in the Roosevelt Rotunda, second floor. A magnificent display of the delicate art of folding paper, featuring dinosaurs, elephants, jellyfish and much, much more. A delight for both children and adults.

South of Winter. Through November 30 in the Birds of the World Hall. A photographic exhibition of works by Steven C. Wilson and Karen C. Hayden. These photographs of the coastal wildlife of the Southern United States begin a national tour here.

African Textiles. Through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses, wrapping for the dead, masks, puppets, and clothing.

Francis Lee Jaques: Artist-Naturalist. Through January 8, 1984. Akeley Gallery. This exhibit features this artist's pioneering work in the realm of wildlife habitat diorama design. This master of realist imagery translated the essence of a living environment, through light, space, and atmosphere, to habitat formations on two-dimensional murals.

December at the Museum

India Month. Leonhardt People Center. Weekends from 1:00 to 4:30 p.m.

Members' Origami Workshop. Saturday, December 3. Reservations required.

The Cotton Club Era. Wednesday, December 7 at 7:00 p.m.

Cockroaches. Thursday, December 15, at 7:30 p.m.

Anthology of Cuban Music. Saturday and Sunday, December 10 and 11 at 3:00 p.m.

Bloomington Concert. Sunday, December 18 at 3:00 p.m.

Planetarium Events

Cosmic Mysteries. Through November 20.

Are UFOs visitors from the stars? Could the extinction of the dinosaurs millions of years ago have a cosmic connection? What will be the ultimate fate of our universe? *Cosmic Mysteries* explores these and other fascinating questions, the answers to which have been eluding science.

Sky show times:
Weekdays: 1:30 and 3:30 p.m.

Saturday: 11:00 a.m., and

hourly from 1:00 to 5:00 p.m.
Sunday: hourly 1:00 to 5:00 p.m.

Admission for Participating, Donor, and Elected Members is \$2.75 for adults, \$1.50 for children. For non-Member prices call 873-8828.

The Spirit of Christmas. November 25 through January 2, 1983. This year, utilizing the Hayden Planetarium's new computer automation system, we present the Spirit of Christmas, featuring more music and beautiful visuals than ever before.

Weekdays: 1:30 and 3:30 p.m.

Saturday: 11 a.m. and hourly from 1:00 to 5:00 p.m.
Sunday: hourly from 1:00 to 5:00 p.m.

The Planetarium is closed Thursday, November 24 for Thanksgiving. The Spirit of Christmas will be featured at 11:30 a.m., 12:30, 2:30 and 4:30 p.m. on Friday, November 25. Additional shows will be added Christmas week, December 25 to January 2, 1983.

Programs and Tours

Museum Highlights

Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Saturday, from 10:30 a.m. to 12:30 p.m., and 1:30 p.m. to 4:30 p.m. The Center is closed Sundays and Mondays.

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater: (212) 496-0900. Currently the films are:

To Fly!, a history of American aviation complete with barnstorming in the Midwest, ballooning over Niagara Falls, and hanggliding off volcanic cliffs in Hawaii.

Living Planet, an overview of the evolution of life from a drop of water to the technological achievements that gave rise to New York City and space exploration.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the Food Express, in the basement. Members receive a 10% discount.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$6.00 for cars, \$7.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays, Sundays and most holidays: noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwestern Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Native American Film Festival

Saturday, November 12 and Sunday, November 13, 11:00 a.m. to 5:00 p.m. Kaufmann Theater. Free.



A weekend of recent documentary films about Native peoples throughout the Americas will be shown at the American Museum of Natural History as part of the Museum of the American Indian's annual *Native American Film and Video Festival*. Focusing on both traditional ways and contemporary concerns, the films use a variety of treatments and represent many viewpoints and voices. Ethnographic films from a recent project of Mexico's *Instituto Nacional Indigenista* portray aspects of Native communities in detail. *Tule Technology*, produced by the Smithsonian Institution's Department of Folklife, documents traditional techniques for using the tule reed to make houses, decoys and boats.

Among the topics explored in the weekend's programs is spirituality in Native American life. *Haa Shagōon* by Joseph Kawaky documents a sacred peace ceremony held by the Chilkoot Tlingit, presented from the viewpoint of one elder, the sponsor of the ceremony. In *The Great Spirit Within the Hole*, by Chris Spotted Eagle, interviews with Native Americans in prison demonstrate the impact of traditional spiritual practices. Peter Raymont's *Arctic Spirits* looks at the rise of Christian fundamentalism among Inuit people, examining both missionary work and the relation of fundamentalist practices to shamanistic tradition.

The impact of the exploitation of natural resources on the survival of Native peoples is the subject of *The Probable Passing of Elk Creek*. The film

Tlingit Indian elders assemble for a sacred peace ceremony which is documented in the film, *Haa Shagōon*.

documents the change and disruption brought about by the construction of a dam on the Grindstone Reservation. *Four Corners: A National Sacrifice Area?* investigates the energy resources issue in the American Southwest through the various viewpoints of industry, government and Native American communities of the area.

Sponsored by the Museum's Department of Education in cooperation with the Museum of the American Indian, the festival is free to all Museum visitors. Seating is on a first come, first served basis so members are advised to arrive early to avoid disappointment. The festival will continue on the weekend of November 19 and 20 with video screenings at the American Indian Community House. For a complete schedule call the Museum of the American Indian at 212-283-2420 or the Museum's Department of Education at 212-873-1300 ext. 559.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

Call for volunteers — The Museum needs people to staff information desks and the dinosaur sales area and to conduct Highlights Tours. If you have some spare time (especially on weekdays) and enjoy working with people, call the volunteer office at (212) 873-1300 ext. 538.

6 1:00-4:30 p.m. Judaica Month. Jewish Influence in Christian and Muslim Education; Jewish Folktales; Israeli Folk Dances. Leonhardt People Center. Free.

Members' Behind the Scenes Tour. Department of Herpetology (See article page 3.)

8 Election Day (Museum open)

2 7:00 p.m. Cuban Film Festival. Documentary films reflecting the dynamics of Cuban society and aspects of Cuban life. Auditorium. Free. (See article page 5.)

7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

3 2:00 p.m. Ancient Mesamerican Civilization. Gallery Talk with J. Munoz. Assemble at first floor Information Desk. Free.

7:00 p.m. Systematics Discussion Group. Room 419. Free.

Members' Behind the Scenes Tour. Department of Herpetology (See article page 3.)

11 Veterans Day (Museum open)

5 1:00-4:30 p.m. Judaica Month. Mini Theater: The Town of Little People; Jewish Influence in Christian and Muslim Education; Jewish Folktales. Leonhardt People Center. Free.

2:00-5:30 p.m. Identification Day. Roosevelt Rotunda. Free. (See article page 4.)

12 11:00-5:00 p.m. Native American Film and Video Festival. Kaufmann Theater. Free. (See article page 7.)

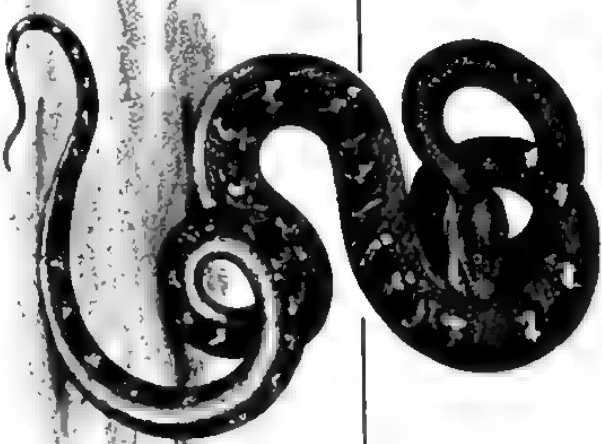
1:00-4:30 p.m. Judaica Month. Mini Theater: The Town of the Little People; Jewish Art and the World Art Movement; Israeli Folk Dances. Leonhardt People Center. Free.

First Quarter (half moon)

13 11:00-5:00 p.m. Native American Film and Video Festival. Kaufmann Theater. Free. (See article page 7.)

1:00-4:30 p.m. Judaica Month. Israeli Folk Dances; Jewish Art and the World Art Movement; Jewish Folk Songs. Leonhardt People Center. Free.

2:00 p.m. N.Y. Shell Club. Room 419. Free.



15 8:00 p.m. N.Y. Entomological Society. Room 426. Free.

16 7:00 p.m. Blacks and Indians. Auditorium. Free.

8:00 p.m. Inanna. Special Members' Program Reservations required. Kaufmann Theater. (See article page 4.)

17 2:00 p.m. Marriage in a Central Indian Village. Gallery Talk with G. McMillan. Assemble at first floor Information Desk. Free.

8:00 p.m. N.Y. Microscopical Society. Room 419. Free.

Leonid Meteor Shower

18 Leonid Meteor Shower

19 1:00 and 3:00 p.m. Puerto Rican Discovery Day Celebration. Teatro Otra Cosa presents traditional Puerto Rican folk dances and music in a program commemorating the discovery of Puerto Rico. Kaufmann Theater. Free. (See article page 5.)

1:00-4:30 p.m. Judaica Month. Israeli Folk Dances; Jewish Folktales; Jews in Muslim Lands. Leonhardt People Center. Free.

20 11:30 a.m., 1:30 and 3:30 p.m. Dinosaurs Are Forever. Reservations. Kaufmann Theater. (See article page 4.)

1:00-4:30 p.m. Judaica Month. (See listings for November 19.)

1:00 p.m. American Cetacean Society. Room 319. Free.

2:00 p.m. N.Y. Turtle & Tortoise Society. Room 129. Free

2:00 p.m. N.Y. Paleontological Society. Room 426. Free

21 The 1983 Ongami Holiday Tree is on display in the Roosevelt Rotunda. The tree has more original animal ornaments than ever before, including habitat groups, and is crowned with a mobile of multi-pointed stars

23 8:00 p.m. Mel Grotto; Nat'l Speleological Society. Room 129. Free.

24 Thanksgiving Day (Museum closed)

25 Moon at perigee (farthest from the earth)

26 1:00-4:30 p.m. Judaica Month. Mini Theater: The Town of the Little People; Jewish Crafts of the Past; Jewish Folk Songs. Leonhardt People Center. Free.

27 1:00-4:30 p.m. Judaica Month. Mini Theater: The Town of the Little People; Jewish Contributions to American Art; Jewish Folk Songs. Leonhardt People Center. Free

28

29

30 7:00 p.m. Harlem Renaissance. Kaufmann Theater. Free. (See article page 4.)

7:30 p.m. The Adlon-dacks: The Beauty and The Peril. Members' Evening Program. Auditorium. Tickets required. (See article page 1.)

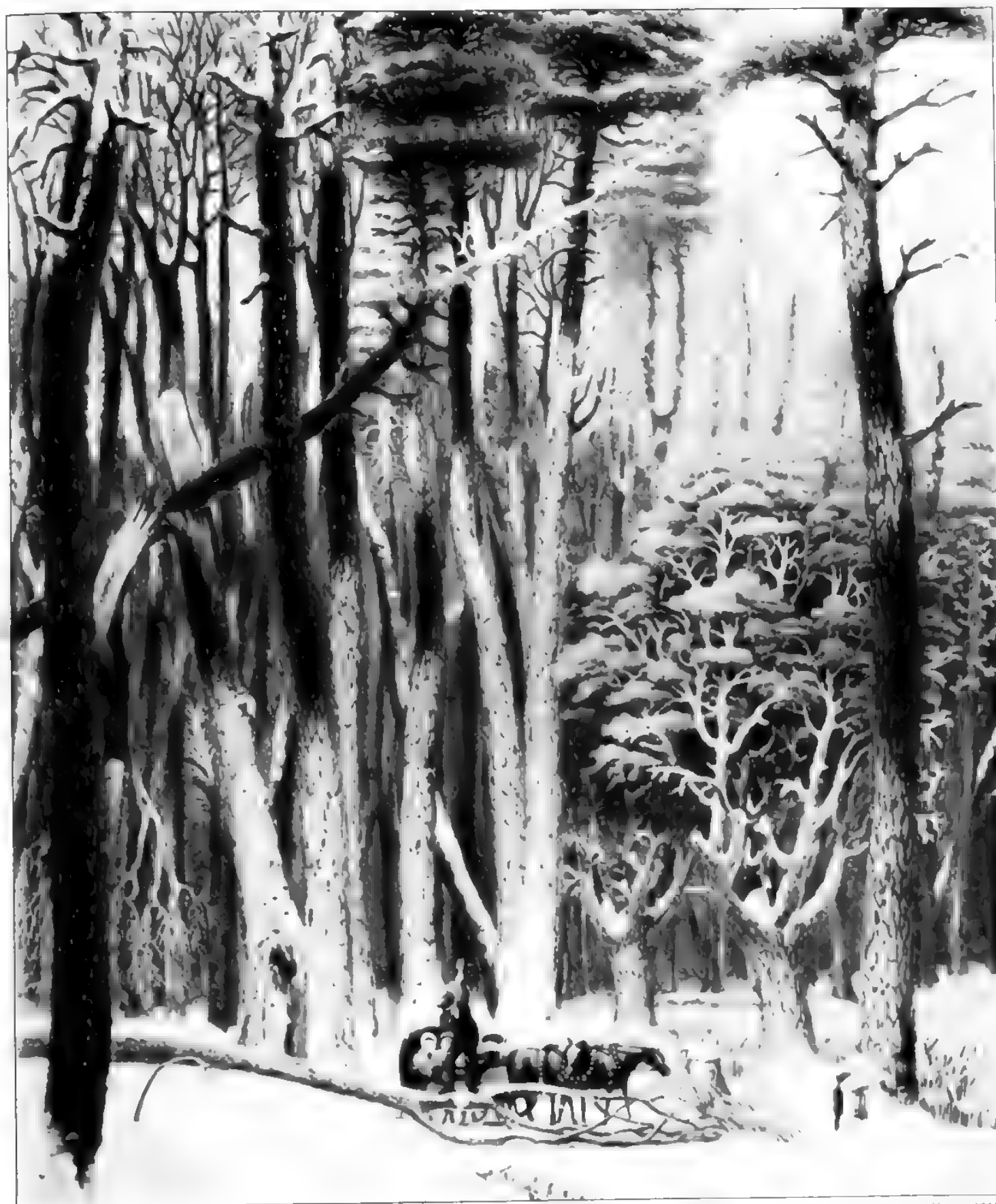


Galapagos Tortoise

November 1983
American Museum of Natural History

ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol 8, No 10 December 1983



George Harvey, 1881
Courtesy of the New York Historical Society

The Spirit of Christmas Past

The Hayden Planetarium Through January 2, 1984

What was the Star of Bethlehem? Who put up the first Christmas tree? Why do couples kiss under the mistletoe? These and other questions will be explored in the Planetarium's new sky show "The Spirit of Christmas."

The show celebrates the sky and spirit of the holiday season. With the help of the Planetarium's Zeiss projector and new automation computers, the show will take you back to distant times and far-off lands to discover the origins of the holiday traditions we

cherish today. You will learn why the celebration of Christmas coincides with an ancient pagan rite and how a kindly fourth century bishop from Asia Minor may be considered the first Santa Claus. The show will allow you to observe the sky on the night Christ was born. Astronomers will try to unravel the mystery of the Guiding Star. Was it a comet, a supernova or an awesome miracle?

Songs, carols and poems of the holidays will be interspersed throughout

the program. One moment you will sit beneath a brilliant winter sky surrounded by snow-coated evergreens, and in the next a rendition of *'Twas the Night Before Christmas* will begin, as Santa flies into the Sky Theater silhouetted by the light of the moon. The show concludes with a beautiful retelling of the Christmas story.

Participating, Donor and Contributing Members receive a 25% discount. For information call (212) 873-8828

Ice Age People

Over ten thousand years ago bands of Paleo-Indians survived on this continent in a cold and dangerous time. The artifacts and sites they left behind tell us of their skills, their strategies, and their journeys.
Page 6

Year in Review

Ever-changing and ever-growing, the Museum has come a long way in the past year. Highlights of both public and behind-the-scenes projects are included in this issue.
Pages 4 and 5

Fortuitous Folds

An origami renaissance heralds holiday cheer this winter in the Roosevelt Rotunda. This year's tree features over 150 kinds of origami figures, plant and animal, extinct and extant.
Page 6

Myths and Legends

Through myth, people of all times have sought to understand and relate to the natural world, and to communicate the values and "truths" of their times. Join Joseph Campbell for a discussion of early mythology, oral tradition and spiritual awakening.
Page 3

The Beats Heard 'Round the World

Sunday, December 4, 2:00 p.m.
Kaufmann Theater, Free

The tradition of solo percussion will be the theme of a lecture performance by musician and composer Jerome Cooper, who specializes in percussion instruments from around the world. Mr. Cooper's music is a combination of jazz and traditional music forms from many countries. He uses drums and the instruments which traditionally accompany them, including the *chirama* from Honduras and the African *balaphone*, to create the unique sounds and patterns in his solo performances. He will discuss the various instruments during the program, and talk about his personal philosophy of music.

Mr. Cooper is a founding member of the Revolutionary Ensemble and has played with

such leading jazz musicians as Rahsaan Roland Kirk, Steve Lacy, and Sam Rivers. He has performed throughout the United States, Europe, and Africa. Mr. Cooper's complex rhythmic improvisations have been compared to the music of modern composers such as Steve Reich and Phillip Glass, and have much in common with West African drumming and North African Sufi music.

Sponsored by the African-American program of the Museum's Department of Education, the performance is free to all Museum visitors. Seating will be on a first-come, first-served basis, and Members are advised to arrive early to avoid disappointment. For further information, please call (212) 873-1300, ext. 514.



Jerome Cooper will play these instruments from around the world

The Stars of Harlem Nights

Wednesday, December 7, 7:00 p.m.
Kaufmann Theater, Free

During the twenties Harlem became a romantic, exotic escape where the wealthy and influential from midtown Manhattan would go for a night out. They went to hear ragtime, blues, and jazz music, and to enjoy the accompanying stage shows.

The centerpiece of uptown entertainment was the gangster-owned Cotton Club at 142nd Street and Lenox Avenue. Fast-paced, lavishly staged reviews with a chorus line of beautiful women, were the specialty of the Club. The shows employed talented songwriters like Dorothy Fields and Jimmy McHugh. Some of the key figures in the revues were Ethel Waters, Cora LaRedd, Cab Calloway and the Mills Brothers.

Using archival films and original recordings, Ernest R. Smith and Howard E. Johnson will take a look at the Cotton Club and the stars who played there. The program

will include films featuring Duke Ellington and the Washingtonians, the legendary dancer Snake Hips Tucker, and the great tap-dancer Bill "Bojangles" Robinson.

Ernest R. Smith is co-author of *The Black Book*, a history of black culture in the United States. He has been collecting jazz and jazz dance films since 1957.

Howard E. Johnson once sang and danced with the Duke Ellington revue at the Cotton Club. He collects films and recordings concerning the sociology of black studies.

This program is presented by the African-American Program of the Department of Education, and is free to all Museum visitors. Seating will be on a first-come, first-served basis, and Members are advised to arrive early to avoid disappointment. For further information, please call (212) 873-1300, ext. 514.



The Cotton Club — "The place to go" in the 1920's

Members' Memo To The Many Who Deserve Our Thanks

Many people are unaware that the American Museum of Natural History is a private institution. Its incorporation followed a special act of the New York State Legislature in 1869. Shortly afterwards, the Museum launched a fund drive which raised \$50,000 to purchase natural history specimens. The first annual report at the end of 1869 listed 58 donors with names like Morgan, Roosevelt, and Colgate, and an annual budget of \$43,000.

The Museum has come a long way since then. Today our budget is over 28 million dollars and we are supported by a broad base of contributors which includes government agencies, corporations, foundations, and almost a half million members. Most donations go towards the general operating costs of the Museum. General operating support covers everything from exhibit maintenance to the salaries of most of the people who work here. Since their names are not attached to specific halls or projects, those whose donations support general operations are often overlooked by the general public. Yet without their donations, the Museum could not survive as a viable institution.

Over the past few years, we have tried to diversify our support as much as possible. In this way, if funds are cut

back from any one source we still have a number of others on which to depend. Although government funding has been reduced in recent years, government organizations are still among our largest contributors. We are especially grateful to the City of New York, which not only owns our buildings but last year provided almost four and a half million dollars for their operation and maintenance. The New York State Council on the Arts gave us \$603,500 to fund general operations, and also funded projects such as a mineral sciences catalogue and textile conservation. Our corporate campaign raised nearly a million dollars from 278 corporations, with Chemical Bank and Amara Hess leading in the corporate field.

The Museum also solicits many funds that are targeted to specific programs. The National Science Foundation has given almost a quarter of a million dollars for the expansion and renovation of the Ichthyology storage collections. Mobil has contributed funds to keep Museum admission free on Friday and Saturday evenings. The Leonhardt Family Foundations and the Charles A. Dana Foundation have provided support for a modernized Education Wing, and the Vincent Astor Foundation has given a million dollars for improvements in visitors' services.

Membership has also benefited from special grants in recent years. The Bodman Foundation and the Union Pacific Foundation donated funds for us to develop new membership recruitment campaigns, and the National Endowment for the Arts has given the Museum a challenge grant designed to stimulate over a million dollars in our membership and fundraising efforts.

It is impossible to list all our benefactors in this short memo, but if you would like to find out more about who has given what to the Museum, I urge you to ask for our annual report. Just write a note to the Membership Office or call (212) 873-1327 and we will be glad to mail you a copy. I also suggest that you look at the *Annual Highlights* in the center of this issue. It will give you a behind-the-scenes view of what our scientists have been doing for the past year.

I would like to end this memo with a huge thank you to all the Members who have supported us throughout the year and to all the scientists, educators, volunteers and support staff who have contributed their time and effort to the Membership program. Happy holidays to everyone!!

Amy A. Schol

Havana Serenade

Saturday and Sunday, December 10 and 11, 3:00 p.m. Kaufman Theater
\$4.00 for Members, \$5.00 for non-members

Towards the end of the 17th Century a special kind of song was heard in the Streets of Santiago de Cuba. It was named "La Ma Teodora" after a popular character who used to sing in the town. Following the lead of this early singer, Cubans used the familiar forms of traditional Spanish music and African rhythms to create a musical expression all their own.

In Habana: Antología

Musical, forty songs by Cuban composers and lyricists spanning a period from three hundred years ago to the present day will be performed by Repertorio Español. Included in the performance will be selections of popular Cuban tunes like "Mama Ines," and "Tu." There will also be selections from Cuban zarzuelas, or operettas, like "Maria La O," and the famous "Cecilia Valdez."

Repertorio Español, founded in 1968, is a New York-based theatrical company widely acclaimed for its repertory of classical and modern productions in Spanish.

The performances are sponsored by the Caribbean Program of the Museum's Department of Education. For further information and ticket availability, please call (212) 873-1300, ext. 514.

The Way of the Animal Powers

Wednesday, December 14, 7:30 p.m. Main Auditorium, Free

The myths and legends passed down to us from ancient times have served as vehicles to explain phenomena of nature, the origin of man, or the customs, institutions and religious rites of a people. Through myth the human race has attempted to express concepts of truth, and to pass on important stories and events to future generations.

In this lecture, Joseph Campbell will discuss the earliest oral traditions as he reviews the myths of the primitive hunters and gatherers and the Paleolithic Great Hunt. One of the world's leading authorities on mythology, Professor Campbell has just completed the first volume of his *Historical Atlas of World Mythology*, entitled *The Way of the Animal Powers*. The book traces



the imprints left behind by early peoples, analyzes their artifacts and details their artistic work in caves and on bits of stone and bone. All of this evidence points to a spiritual awakening in these early human beings, an awareness that is the fundamental difference between animals and people.

Joseph Campbell is Professor Emeritus at Sarah Lawrence College. He has lectured extensively throughout the United States and abroad. His books, among the

classics in mythology and literature, include *The Hero With a Thousand Faces*, *The Mythic Image*, and *The Flight of the Wild Gander*. He lives in New York with his wife, the dancer and choreographer Jean Erdman.

This program, sponsored by the Education Department, is free to all Museum visitors. Seating will be on a first-come, first-served basis, and Members are advised to arrive early to avoid disappointment. For more information, please call (212) 873-1300, ext. 559.

The Perpetual Guests

Thursday, December 15, 7:30 p.m., Auditorium
Free and open only to Members

Guess who's coming to dinner! Although they probably won't appear until the lights are out and you've gone to bed, these house guests are familiar to most New Yorkers. They hitchhike unnoticed in grocery bags and pants cuffs, or simply meander in, uninvited, to find a warm place to call home — most often in the kitchen or bathroom. They're among an elite group of New Yorkers that has something in common with the Founding Fathers, since they arrived here as stowaways on the ships that brought the first settlers from Europe.

Dr. Betty L. Faber invites Members and their guests (not the perpetual kind) to join her for an evening lecture about her research into the behavior of cockroaches. Dr. Faber, a Research Associate in the Department of Entomology, has been studying the American cockroach in her greenhouse laboratory on top of the Museum for the past eight

years. Working into the wee hours of the morning she has recorded the lifestyles of hundreds of individuals by observing their eating habits, reproductive cycles, and behavior through a special infrared camera.

Dr. Faber has lent her services to the New York Transit Authority, which once came to the Museum for help in eliminating the many roaches riding around on city buses. Using slides, she will illustrate the various kinds of roaches that inhabit New York, including the German, the Oriental, and the Television roach.

Members are invited to come early, when Dr. Faber and her associates will be on hand to discuss some interesting displays set up outside the Auditorium. These will include some of the more unusual cockroaches from around the world, cockroach predators, and examples of different cockroach behaviors.



A familiar "guest" of New York City Homes

Members' Tour of the Month

Northwest Coast Indians

From 1897 through 1902, the Jesup Expedition of the American Museum collected artifacts and made studies of the native peoples of the Northwest coast region, forming the basis of much of our knowledge of their cultures.

Members are invited to join volunteers from the Museum's Highlights Tour program for a special tour of the Hall of Northwest Coast Indians, as they explain more about these tribes of hunters and gatherers. The sixty-five-foot Haida ceremonial canoe will be featured, and guides will explain how it was hollowed out from a huge cedar tree. Tour participants will see elaborate clan emblems carved on the boxes and bowls of the Tlingit tribes; a Chilkat robe worn by a noble person, woven with designs relating to family history; copper plaques which were highly valued as currency; and an enormous house pole decorated to display pride in ancestry. In addition, intricately woven cedar baskets, Bella Coola masks, and amulets used by

shamans will be viewed.

This tour offers Members an in-depth look at the largest

collection of this material in the world. Please use the adjacent coupon to register.

Members' Tour: Northwest Coast Indians. This Tour is free and open to Participating, Donor, and Contributing Members of the Museum. Please indicate a first and second choice of times.

- ☐ Sunday, January 8 at 11:00 a.m.
- ☐ Wednesday, January 11 at 7:00 p.m.
- ☐ Saturday, January 14 at 11:00 a.m.
- ☐ Wednesday, January 18 at 7:00 p.m.
- ☐ Friday, January 20 at 7:00 p.m.
- ☐ Sunday, January 22 at 11:00 a.m.

Number of people: _____

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed stamped envelope to Northwest Coast Indians, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024. Registration closes on December 31.

ROTUNDA

ISSN 0194-6110

Vol. 8, No. 10
December 1983

Henry H. Schulson — Manager of Membership Services
Ruth Q. Leibowitz — Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Kim Hamilton — Editorial Assistant
Marion Halberg — Editorial Assistant
Alan Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Contributing Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327. © 1983 American Museum of Natural History. Second-class postage paid at New York, N.Y.

Printed by Waldon Press, Inc. New York

Annual Highlights

Last year almost 2.5 million people visited the Museum. A recently published survey indicated that more than half of them lived outside of New York City, and one out of ten visited us from a foreign country. They came to view our magnificent permanent exhibition halls, and to enjoy new temporary exhibitions such as African Textiles and Star Gods of the Americas. Thousands came for our educational programs. The Sixth Annual Margaret Mead Film Festival featured more than 40 anthropological films, half of which were New York or World premieres; Dr. David Hamburg spoke on human adaptation to the 20th Century, as the Museum reinaugurated the *Man and Nature* lecture series, and 1,000 ornithologists convened at the Museum for a week-long celebration of the centennial anniversary of the American Ornithological Union.

Those who visited us saw an ever-changing and ever-expanding Museum. Food services vastly improved with the introduction of the American Museum Restaurant. The Museum celebrated the opening of the Kaufmann and Linder Theaters, which are part of the new Dana Education Wing, and also opened a new temporary exhibition gallery adjoining the hall of Northwest Coast Indians. Construction continued on a new balcony for the Museum Shop, the Margaret Mead Hall of Pacific Peoples and the Hall of Peoples of South America. The Hayden Planetarium received four automation computers, which enrich the sky shows by making possible many exciting new special effects.

Exhibitions and programs are just one aspect of the Museum's work. At the heart of the Museum are the collections and the scientists who work with them. The Museum is one of the world's great centers for collection-based research. More than 250 scientists and associates are pursuing work in Museum laboratories and in the field so that our collections and the workings of the natural world can be better understood. Other staff members are devoting their time and efforts to preserving the collections for future generations. They are also making the collections more accessible to the thousands of scientists from around the world who visit us or request loans of our materials. Throughout the year, Rotunda makes you aware of all our programs and exhibitions. In this year in review, we would like to give you a sampling of the many other museum activities of the past year.

Creature Features

Humans share the earth with millions of other creatures — over a million species in the class Insecta alone! Each species has its own unique survival code, ancestry, and relationship through the ages with the planet that is our home. Creatures of every continent and time have captured the imagination and scientific expertise of Museum staff members. The examples below represent a fraction of the studies and discoveries presently underway.

- *Woodpeckers of the World*, a monograph containing 101 color plates and treating all 198 species of woodpeckers, was published last year. This beautiful volume is the culmination of nearly 20 years of research by Dr. Lester Short (Ornithology). He has observed and studied most of these colorful, conspicuous birds, which dwell on every major land mass except Australia. The text emphasizes behavior and taxonomy, while the plates, by painter George Sandstrom, embody a rare mixture of scientific realism and excellent artistry.
- One shark which no swimmer or sea-farer need fear is the hybodont shark *Hybodus basanus*, extinct for approximately 65 million years. It and related species were extremely widespread beginning at least 250 million years ago. Dr. John G. Maisey (Vertebrate Paleontology) has written a report on the cranial anatomy of hybodont sharks. It is the first to describe in detail the braincase of a Mesozoic shark. Dr. Maisey has already begun further research on the anatomy of related sharks. Although sharks do not have skeletons made of bone, they do possess calcified cartilage which has been preserved in the fossil record. If hybodont and related sharks are as closely related to modern sharks as Dr. Maisey believes, the ancestors of today's sharks may also date back 250 million years.
- *Ptiloglossa arizonensis* is a large, crepuscular bee. Because it flies only from before dawn to shortly



Dr. Kendall presents tea at a Korean birthday party

after sunup, it is seldom seen. Its nests had never been found until recently, when Vincent Roth, Resident Director of the Southwest Research Station, chanced upon a group of these bees near his home and led Dr. J. G. Rozen, Jr. (Entomology) to their ground nest. Since then Dr. Rozen has drafted a paper on the bees' behavior and foraging activities. Although they nest in a group, they are solitary in that they have no worker caste. A *Ptiloglossa* nest contains waterproof chambers in which eggs float atop nectar. The newly born larva literally swims in its first meal!

- *Aplysia*, the hermaphroditic sea hare, has definite social preferences. This gastropod, captured in the warm waters of Puerto Rico and brought to the Museum for study, does not respond to each of its peers with the same eagerness for contact. Dr. Ethel Tobach (Mammology) is working to uncover exactly what qualities these animals sense in one another which lead to social and sexual reactions which range from choosing one *Aplysia* over another as a mate, to pushing an unwanted individual out of its cage.
- Dr. Cheryl Harding (Ornithology) continues to uncover evidence that female hormones play an important role in the social and sexual behavior of the male zebra finch. For instance, extremely aggressive behavior in males is impossible without the female hormone estradiol. Male courtship behavior, of which singing is an important component, is dependent upon both male and female hormones. Male finches even have higher concentrations of certain female hormones than females do!
- The strong-electric catfish uses electrical pulses to stun and kill its prey. Weak-electric fishes such as the elephant fish, however, produce electric pulses too weak to harm other organisms. What then is the significance of these pulses? Research by Dr. Peter Moller (Ichthyology) is showing that for the elephant fish electric signals are used for navigation as well as social communication, expressing territoriality, species recognition, and possibly sexual attraction.

Of Human Interest

Humans too are part of the earth's rich natural history, and Museum research reflects this. The Department of Anthropology by definition (anthropology means the study of man) is chiefly concerned with the human condition, and its staff members work diligently both at home and abroad to enlarge our views of human life and cultures. Anthropology is not alone in its pursuits — other disciplines as well contribute work which relates directly to the quality and understanding of human life.

- Drs. Stanley and Ruth Freed (Anthropology) first visited the Indian Village of Shanti Nagar, 12 miles from Delhi, in 1958. Their most recent visit took place in 1978. Subsequent work has focused upon the many changes in the area which have accompanied modernization. Today tractors have replaced bullocks, making it possible to use village land more efficiently. Tube wells have largely replaced canal irrigation. These wells provide water on demand, promoting greater crop variety.

Educational levels have risen, and an increasing number of villagers supplement agricultural income with urban employment. Men and women already satisfied with their family's size often choose the most foolproof of all birth control methods — sterilization. These changes are dramatic and far-reaching. Yet they occur in the context of traditions and family ties that endure, largely unchanged, through the generations.

- Dr. George E. Harlow (Mineral Sciences) is collaborating with colleagues here and at the Mount Sinai School of Medicine to study the mineralogical properties of certain asbestos minerals to better understand their relationship with disease. Contrary to popular belief, asbestos is not one product, but may be any naturally occurring mineral fiber having the properties of flexibility, strength, and resistance to heat and chemical reactions. Does the size and shape of an asbestos particle determine whether, after being respired, it will interact with living tissue leading to diseases such as asbestosis or mesothelioma? Does the area where the mineral is mined make a difference? These and other questions are under investigation with the help of sophisticated technological techniques and instruments such as x-ray diffraction, which gives information concerning the crystalline structure of a mineral, and the electron microprobe, which can provide a chemical analysis of a sample within 30 seconds.
- A Korean woman takes her dowry to her husband's family when she marries, becoming part of his economic unit. Because of this, a Korean daughter is considered an economic liability. Will this change as other areas of life change for Korean women? Dr. Laurell Kendall (Anthropology) is currently trying to answer this question, and to understand more about Korean marriage and marriage ceremonies. Among her findings so far are that marriages have become more public and, even for those who live in the countryside, tend more often to be in urban settings than they once were. Women continue to achieve more earning power prior to marriage, although they seldom work once they have married. Dr. Kendall has recently refined a questionnaire to be used on subsequent visits to Korea. One of the target groups she will study are women wage-earners who have migrated from their provincial homes to the capital city.
- Blood flukes are parasitic flatworms which affect fish, reptiles, birds and mammals. The 1983 Annual Report of the World Health Organization estimated that 200 million people, mostly in tropical climates, are infected with blood-flukes. One of the most devastating effects of their presence in the human body is the extreme enlargement of the spleen and liver, where they reach sexual maturity. Dr. Horace Stunkard (Invertebrates) has studied flatworms extensively, adding a great deal to our knowledge of their evolution and reproduction. His work currently focuses on their evolution from parasites of reptiles to those of warm blooded creatures. The more primitive worms are hermaphroditic and live in the arteries, while the mammalian and avian parasites have separate sexes which dwell together in the veins, the male wrapped around the female. The reasons for these differences are currently under investigation.

Of Local Interest

While many Museum scientists journey to far lands and waters to further our knowledge of Earth and her inhabitants, others concentrate on home territory. We tend to forget sometimes that, although highly settled and industrialized, states such as New York and New Jersey have a rich natural history.

- Although New Jersey is one of the smallest and most densely populated states, it contains approximately one fourth of all mammalian species found in the United States. Dr. Richard G. Van Gelder (Mammology) is currently compiling an annotated checklist of New Jersey mammals, the first time in 75 years such a list has been undertaken. His work encompasses both mammals that have lived in the state in past years and those currently inhabiting it. One welcome surprise is that after being considered extinct in 1904, the white tailed deer of New Jersey now exceed 125,000 in number. Black bear and bobcat still inhabit the state's northern forests.
- Dr. Lavett Smith (Ichthyology) has completed a book-length manuscript on the inland fishes of New York State. He continues to study fishes of the Genesee River system, which flows into Lake Ontario at Rochester. One bit of good news is that several rare fishes collected forty to fifty years ago are still breeding, after approximately 30 generations in New York State waters. Dr. Smith is also continuing a study of the otoliths of local fish species. The otolith is an auditory organ which tells a fish which way is up. It forms at an early embryonic stage. Concentric bands that form within it approximately each day of a young fish's life help the scientist determine its age and the waters it has journeyed through. This study is providing important clues about the spawning patterns of these fishes.
- Michael W. Klemens (Herpetology) participated in a study of Central Park's wildlife. Results so far indicate there are breeding populations of both bullfrogs and snapping turtles. The breeding status of two other turtle species is still under study. Dr. Klemens found unusual color patterns on many of the bullfrogs, which might be the result of their geographical separation from other bullfrog populations. The study was done at the request of the Central Park Conservancy. Dr. Klemens is also working with the Connecticut Nature Conservancy to survey the herpetofauna of that state.

Conservation

Preservation of the items on public exhibition and in the vast scientific collections is a fundamental obligation of the Museum. To this end, conservation efforts have been expanded to ensure the excellence and availability of our collections for future generations of researchers, students, and the general public.

- The Department of Mammology has restored and reorganized many of the skulls and skeletons in its extensive collection, providing safer storage and

better access. A new room known as the *Equus* or horse storage area has been created, containing zoological treasures such as fourteen cleaned and reconditioned horse skeletons mounted by Chubb. Among these is the Horse and Man, the model for the Museum's logo. Many old specimens were removed from carbolic solution to be cleaned, relabeled, and transferred to newly prepared tanks with isopropyl alcohol.

- Thanks to a National Science Foundation grant renewal, the Department of Vertebrate Paleontology was able to relocate many dinosaur specimens to new storage areas. These fossils are now being repaired, and can be made available for research for the first time in decades.
- This year some oily, crusty patches were noticed on various wood feast dishes in the Hall of Northwest Coast Indians. The objects were cleaned and put back on display after the cause of the problem was found: fish oils were leeching out of the wood and forming crystals on the surface. This is just one example of the work the conservation division of the Department of Anthropology is doing to find out more about the interaction between objects of various materials and the environmental conditions within their display cases.

Merger and Accessions

Taking care of the collections we already have is important, but does not suffice if the Museum is to keep growing as an institution. Our viability both as a research and public-oriented institution depends on our ability to keep changing, learning more, and sharing new treasures with our many visitors. Accessions received from both individuals and institutions are therefore of paramount importance in helping the Museum reach its goals.

- A recent major event for the Museum was an agreement in principle to merge the holdings of the Museum of the American Indian into a new home here at the American Museum of Natural History. Although important details are still being worked out, Thomas D. Nicholson, our director, is confident that the merger will take place. The two collections combined will undoubtedly constitute the finest compilation of Native American material in the world, a priceless resource for scholars and viewers alike. Our museum's exceptional collections of early Eskimo artifacts and Northwest Coast Indian material will complement the Museum of the American Indian's peerless holdings of Southwest and Plains Indian material, Maya jade, and Aztec mosaics.
- The Department of Vertebrate Paleontology accessioned two important gifts. The first consisted of 350 fossil fish specimens from Brazil, from Mr. Herbert Axelrod. The specimens are of a very high quality from both a scientific and aesthetic viewpoint. Among them are examples of rare taxa. The second gift was a fossil stingray from the Greenriver Formation in Wyoming. This fossil is a holotype of a new species — representing the

morphological characteristics of the species for the companionship of new finds.

- A spectacular platinum necklace, set with 185 baguette diamonds, and its companion choker, containing 47 round, full cut diamonds, were donated to the Department of Mineral Sciences by Mrs. Zoe B. Larimer. Other important mineral specimens received by the Department include the Amazonite and smoky quartz crystal cluster from Colorado donated by Allan Caplan, and 2,407 mineral specimens from Namibia and South Africa, received from Charles B. Schwartz.

Technology

Whether we fear it or love it, technology is no doubt here to stay (for at least as long as we stay!) Every Museum department makes use in some way of equipment which has been developed during the technological boom of recent decades. One of the problems our fast-moving technology presents is that an instrument which seems the epitome of efficiency one year is topped by a new and better one the following year. This rapid obsolescence, plus the immense cost of many modern instruments presents a challenge to any modern research institution — a challenge the Museum does its best to meet. The following are a few examples of how some of the Museum's equipment is being used to add to human knowledge.

- Dr. Norman D. Newell (Invertebrates) is making use of in-house technology such as the scanning electron microscope (SEM) and a Wang computer system in his study of bivalve fossils, which provide clues concerning a biological crisis that occurred approximately 245 million years ago. The SEM has a theoretical magnification potential of up to 300,000 X, but a more practical one of 20,000 X, above which the quality of the image diminishes. Although Dr. Newell's particular samples require no more than 1,000 X magnification, this still exceeds the capability of the "traditional" optical microscope. Among the Wang computer's many uses is the analysis of proportion and shape variations (biometrics) of the fossil samples. Using the data fed into it, the computer can quickly compare and classify the fossil samples, helping to document the bivalves' evolution and extinction. Based on this work, Dr. Newell believes that extinction during the Permian-Triassic crisis was more gradual than previously thought.
- Mr. Sidney Horenstein (Invertebrates) uses an SWT computer that is hooked up to City University's computer system. One of its major functions is the storage of information about our fossil invertebrate specimens. For example, if a researcher requests information on a particular group of trilobites, the computer can provide a comprehensive list, including genus, species, who has described the various specimens, and references pertaining to them. One of the programs of great importance is the Statistical Analysis System (SAS). Measurements of specimens can be statistically analyzed with this system. For instance, you might want to plot the diameters versus the widths of many fossils of a known species. Later the measurements of an unknown fossil can be fed into the computer, to see if the resulting point falls upon the same graphic line. This method in itself is not new, but the speed at which a computer can do it certainly is.
- Both the Ornithology and Herpetology departments make extensive use of the sonograph, a machine designed to interpret sounds. The taped call of a bird or frog is fed into the sonograph, which captures 2.4 seconds of sound on a revolving disk. It interprets this sound, printing out a graph with frequency on the vertical axis and time on the horizontal axis. The intensity of the sound is reflected by the darkness of the traces. Sonographic printouts are used to interpret such things as the mating calls of various frog species or geographical variation among populations of one avian species. A sonographic analysis may often be the key to identification or classification when morphology alone does not suffice.



Dr. Lanyon records bird calls to be analyzed by the sonograph

Fossils of Fifth Avenue

Sunday, January 15, 10:30 a.m. and 1:00 p.m.
\$5.00 and open only to Members

This winter, Sidney Horenstein will repeat one of his most popular Members' tours: Fossils of Fifth Avenue. The tour begins at Rockefeller Plaza where Members will view 450-million-year-old ancestors of the chambered nautilus and will conclude with a look at the 100-million-year-old fossils embedded in the walls of Tiffany's. Members will discover that Fifth Avenue is a cornucopia of fossils and building stones from around the world. Walking up the avenue, participants will

see fossilized clams from Italy, pieces of 350-million-year-old coral reefs from Missouri, and extinct chambered animals from France. A new addition to the tour will be the Italian building stones used to construct the Trump Tower. Mr. Horenstein will talk about how the different building stones were formed, how they were quarried, and the various roles they have played in the earth's history.

The tour will be held snow or shine. Please use the adjacent coupon to register



Trump Tower: A very American building with some very Italian stones.

Fossils of Fifth Avenue, Sunday, January 15
Please indicate a first and second choice if possible

Sunday, January 15 at 10:30 a.m.
Sunday, January 15 at 1:00 p.m.

Number of people: — I have enclosed my check for
\$ — (\$5.00 per person)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Fossils of Fifth Avenue, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Ice Age Hunters

Wednesday, January 11, 7:30 p.m. Main Auditorium
Members, \$12.00, non-members, \$15.00

Over ten thousand years ago at the close of the Ice Age, bands of Paleo-Indians ranged the frozen North American continent. Armed with stone-tipped spears and crude tools, hunting bands pit-

ted their wits and strength against prehistoric game. Using stealth and cunning, these little-known people slaughtered mammoth, mastadon and giant bison. The record of their success is

being read in the kill sites archeologists are uncovering today. Their story is being told by the bones, campfire sites, and artifacts now being excavated.

In a symposium to be held at the Museum, four noted archeologists will discuss their research into the record of Ice Age people, their migration to the New World, hunting technology, and subsistence strategies. The participants will be Dr. Richard MacNeish, Professor of Archeology at Boston University; Dr. Donald Grayson, Associate Professor of Anthropology at the University of Washington; Dr. Dennis Stanford, Associate Curator of North American Archeology at the National Museum of Natural History, Smithsonian Institution; and Dr. Howard Winters, Professor of North American Archeology at New York University. Each will speak on a different aspect of Paleo-Indian existence. Dr. MacNeish will moderate the discussion and take questions from the audience.

Please use the adjacent coupon to order tickets. For more information, call the Department of Education at (212) 873-7505.

Ice Age Hunters, Wednesday, January 11. Participating, Donor and Contributing Members are entitled to two tickets at the Members' price of \$12.00. Associate Members and students (with I.D.) are entitled to one. All other tickets are \$15.00.

Number of Members' tickets _____ X \$12.00 \$
Number of non-member tickets _____ X \$15.00 \$
Total amount enclosed: _____ \$

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Ice Age Hunters, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Deck The Tree With Folded Paper

November 21 through January 8,
Roosevelt Rotunda

Alice Gray has two consuming passions in life — insects and origami. When she came to work in the Museum's Department of Entomology over forty years ago, she started a collection of toy insects. When she found a Japanese book on origami, she bought it because it had a picture of an insect on the cover. Following the book's diagrams, Alice taught herself to fold paper in a multitude of patterns. She made origami insects and used them to decorate a small Christmas tree in her office.

A dozen years ago, Alice began thinking it would be nice to set up a small holiday tree near the Information Desk in the Roosevelt Rotunda, and decorate it with origami animals, insects, and birds. She mentioned this to the chairman of the Exhibition committee, and folded a few animals as examples of what would go on the tree. She soon received a note from the Committee, saying it was a great idea and they would like to erect a twenty-five foot tree! Not feeling nimble-fingered enough to fold all the required decorations by herself, Alice then turned to Lillian Oppenheimer and her friends at the Origami Center of America, as well as Museum employees and volunteers for help. Anxious to share their art with a wider public, they spent countless hours preparing natural history ornaments for the Museum's first tree.

In the past eleven years, over 100,000 hours of time has been donated by volunteer folders to make the Holiday tree possible. They are a diverse group, of all ages and walks of life, whose individual efforts combine to make something beautiful. The tree has grown more complex with each passing year, as new paperfolders have been

enlisted to help.

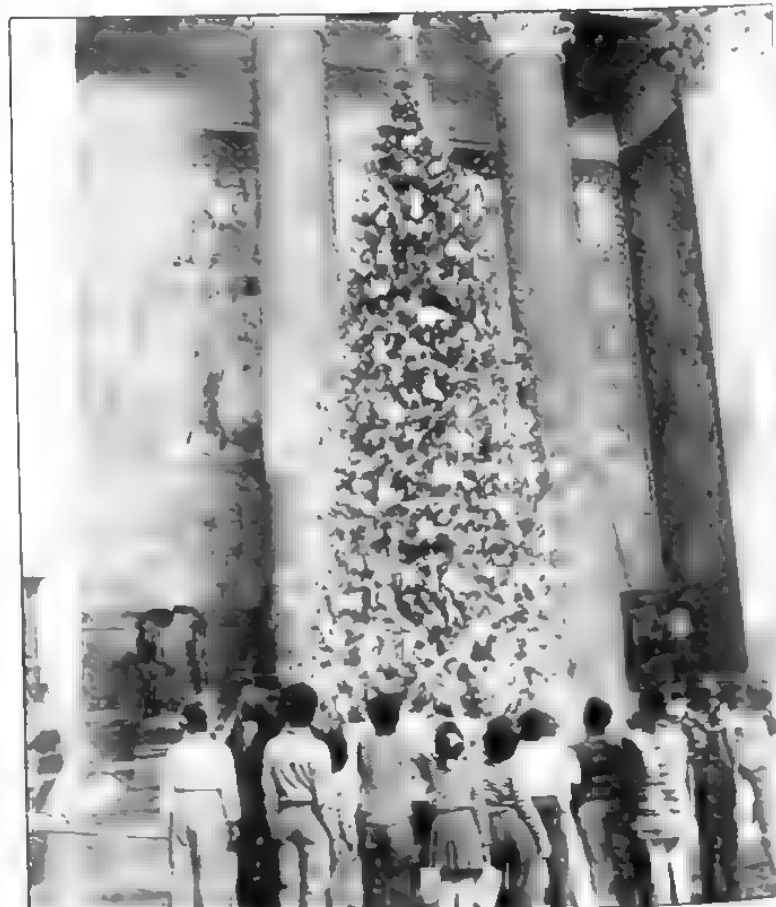
This year's tree exhibits over 150 different kinds of origami figures, from armadillos to zebras. The dinosaurs are a perennial favorite — there are now a dozen or more on the tree. The thirty-foot high mobile above the tree has 747 stars, and takes over five hours to hang. Each year it must be carefully disassembled, coded by section and number, and stored in boxes when the tree comes down. New figures are invented by folders each year and added to the tree.

Throughout the holidays, a staff of forty volunteers is on hand to offer free origami lessons to visitors at the origami table adjacent to the tree.

It's quite an undertaking, but amazingly the entire budget for the ornaments on and around the tree is under \$500.00. Much of the enthusiasm for origami at the Museum has been generated by Alice Gray and her volunteer associate, Michael Shall, who has been practicing origami for 25 years. It was through their efforts and the generosity of the Museum Trustees that The Friends of The Origami Center of America, inspired by Mrs. Lillian Oppenheimer, received space for a new Home Office at the Museum this year. The library and origami collection of the Friends will be housed at the Museum for at least the next five years. In total, thousands of origami pieces will be catalogued for study and exhibition, including rare ones folded by masters of the art.

This year's tree honors Mrs. Oppenheimer and her commitment and dedication to origami over the years.

Hundreds of origami pieces decorate this holiday tree



Museum Notes



Special Exhibitions

Exceptional Gems.

Through January 13, 1984 Morgan Hall of Gems. Three exquisite works of lapidary art, an emerald from the Mogul Dynasty of India, an emerald crystal from Columbia, and a ruby from Burma are featured.

1983 Origami Holiday

Tree. Through January in the Roosevelt Rotunda

Francis Lee Jaques:

Artist-Naturalist. Through January 8, 1984. Akeley Gallery. This exhibit features this artist's pioneering work in the realm of wildlife habitat diorama design. This master of realist imagery translated the essence of a living environment, through light, space, and atmosphere, to habitat formations on two-dimensional murals.

African Textiles. Through December 4 in Gallery 3. The first comprehensive view of the uses and production of African fabrics to be displayed in the United States. Artifacts from the British Museum represent the rich diversity of textile uses, such as armor for horses wrapping for the dead, masks, puppets, and clothing.

January at the Museum

Journey Across Three

Continents. Wednesdays, January 4 and 18, and Thursday, January 12 at 7:30 p.m.

Ice Age Hunters. Symposium. Wednesday, January 11 at 7:30 p.m.

Life in a Hard Shell. Members' Program. January 29 at 1:30 and 3:30 p.m.

Planetarium Events

The Spirit of Christmas.

November 25 through January 2, 1983. This year, utilizing the Hayden Planetarium's new computer automation system, we present the Spirit of Christmas, featuring more music and beautiful visuals than ever before.

Weekdays: 1:30 and 3:30 p.m.

Saturday: 11 a.m. and hourly from 1:00 to 5:00 p.m.

Sunday: hourly from 1:00 to 5:00 p.m.

Additional shows will be added Christmas week, December 25 to January 2, 1984.

Programs and Tours

Museum Highlights

Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Saturday, from 2:00 p.m. to 4:30 p.m., and Saturday and Sunday from 1:30 p.m. to 4:30 p.m. The Center is closed Mondays.

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m. Recommended for ages 5 to 10.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater:

(212) 496-0900. Currently the films are:

To Fly!, a history of American aviation complete with barnstorming in the Midwest, ballooning over Niagara Falls and Hanggliding off volcanic cliffs in Hawaii.

Living Planet, an overview of the evolution of life from a drop of water to the technological achievements that gave rise to New York City and space exploration.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday, 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the cafeteria, in the basement. Museum Members receive a 10% discount.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$6.00 for cars, \$7.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays, Sundays and most holidays: noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Coat Checking. For your convenience the coat check room is located in the basement next to the cafeteria, and on the second floor at the main entrance. There is a 50¢ charge per item.

Exceptional Gems

Morgan Hall of Gems, through Friday, January 13

A stunning emerald carved with a prayer on one side and a floral design on the other is one of three spectacular gems currently on loan to the Museum. Inscribed with the Islamic date 1107 A.H. (1695 A.D.), it was carved during the Mogul Dynasty in India. Nobles of the period (1527-1857) prized precious stones and commissioned the most talented craftsmen to produce works of lapidary art such as this one, called "The Mogul." Such gems were sewn through drill holes onto a turban or sleeve of an elaborate garment worn by an important noble, always prayer side out.

The Mogul emerald was originally mined in Colombia, as was the almost flawless, deep green emerald crystal also on display. Large, fine emeralds were not known until the Spanish Conquistadors discovered them in Colombia. They were prized by native peoples, who used

them as beads or placed them in gold artifacts. After the Spanish conquest, most of the emeralds of this region were exported to Spain and the Middle East as trade goods. This particular crystal, however, was discovered at a mine in Muzo, Colombia, within the last ten years. Because of its smooth crystal faces, lack of flaws, and choice deep color, it is considered among the finest emeralds known.

The third gem, on display for the first time, is a Burma ruby weighing almost sixteen carats. Its size and quality make it extremely rare. It is exceptionally free of flaws and has the "pigeon blood" color considered ideal by connoisseurs.

These three gems have been loaned to the Museum by Allan Caplan, a New York gem dealer and collector of fine gems and minerals, who has made numerous donations to the Museum.

Journey Across Three Continents

Wednesday, Jan. 4; Thursday, Jan. 12; Wednesday, Jan. 18
Main Auditorium, 7:00 p.m., Free

The Third World Newsreel's fifth annual film festival comprises a first-time retrospective of African filmmakers from West Africa, the United States, and Europe. Three films from the festival will be presented at the Museum in January.

On Wednesday, January 4, Asrat Getahun's *Gouma* (Blood Money) will be shown. It explains the ritual punishment undergone by a man who accidentally kills a friend on a hunting trip.

Burning an Illusion, by Menelik Shabazz, will be screened on January 12. It is the gripping story of two young lovers in London's

West Indian community, and their struggle for dignity in a society which offers them only second-class citizenship.

On January 18, the film will be *Ashes and Embers*, by the acclaimed filmmaker Haile Gerima. It depicts the turmoil of Ned Charles, a black Vietnam veteran still angry and scarred eight years after returning from the war.

These films are presented by the African-American Program of the Museum's Department of Education. For more information please call the Third World Newsreel at (212) 243-2310, or the Department of Education at (212) 873-1300, ext. 514.

Who Needs a Melody?

Sunday, December 18, 3:00 p.m.
Kaufmann Theater, Free

Who Needs a Melody? is the title of a young people's concert to be presented by The Bloomingdale Chamber Orchestra, with George Marnier Maull conducting. The concert will include selections such as the first movement of Vivaldi's *Concerto for Two Trumpets in C*, Bartok's *Teasing Song*, Tchaikovsky's *Waltz from the Serenade for*

Strings, and *Carnival of the Animals* by Saint-Saens.

Sponsored by the Museum's Department of Education, the performance is free to all Museum visitors. Seating will be on a first-come, first-served basis, so Members are advised to arrive early to avoid disappointment. For more information please call (212) 873-1300, ext. 559.

The Perfect Holiday Gift

Museum Membership

Save time and order

by calling our toll

free number: (800)

247-5470.

4 African Textiles closes today

Gallery 3.

1:00-4:30 p.m. India Month.

Leonhardt Peoples Center. Free.

2:00 p.m. Aspects of World

Drumming. Lecture and perform-

ance by Jerome Cooper. Kaufmann

Theater. Free.

5

7 7:00 p.m. Cotton Club

Era. Kaufmann Theater.

Free.

7:45 p.m. Amateur Astrono-

mers Association. Linder The-

ater. Free.

8 2:00 p.m. Pre-

Columbian Farming;

Mexico and Guatemala. Gal-

lery Talk with P. Santiacon.

9

10 1:00-4:30 p.m. India

Month. Leonhardt Peoples

Center. Free.

3:00 p.m. Havana: musical anthol-

ogy. Kaufmann Theater. (See arti-

cle page 3.)

Moon at apogee (farthest point

from the earth by 251,400 miles)

11 1:00-4:30 p.m. India

Month. Leonhardt Peoples

Center. Free.

2:00 p.m. N.Y. Shell Club. Room

419. Free.

3:00 p.m. Havana: Musical

Anthology. Kaufmann Theater.

(See page 3.)

12 First Quarter (half

moon)

13

14 7:30 p.m. The Way

of Animal Powers with

Joseph Campbell. Auditorium.

Free.

7:30 p.m. N.Y. Mineral Club.

Leonhardt Peoples Center.

Free.

15 2:00 p.m. Plant

Leaves and the Envi-

ronment. Gallery Talk with H

Schiller.

7:30 p.m. Cockroaches.

Members' Evening Pro-

gram. Reservations required.

(See article page 3.)

16

17 1:00-4:30 p.m. India

Month. Leonhardt Peoples

Center. Free.

18 1:00 p.m. American Ceta-

cean Society. Room 319.

Free.

1:00-4:30 p.m. India Month.

Leonhardt Peoples Center. Free.

2:00 p.m. N.Y. Turtle & Tortoise

Society. Room 129. Free

3:00 p.m. Bloomingdale Concert

Kaufmann Theater. Free

19 Penumbral Lunar

Eclipse

Full Moon

20 8:00 p.m. N.Y. Ento-

mological Society

Room 129. Free

21

22 2:00 p.m. Asian Pre-

history. Gallery Talk

with N. Johnson. Assemble at

first floor Information Desk.

Winter begins at 5:30 a.m.

(Moon at perigee, the point in

its orbit when it is nearest to

the earth.)

25 Christmas Day (Museum

closed)

26 Last Quarter (half moon)

27 8:00 p.m. Met

Grotto: Nat'l

Speleological Society. Room

129. Free

28

29

Siberian pica Lydekker



ROTUNDA

For Participating, Donor, and Contributing Members of the American Museum of Natural History Vol 9, No 2 February 1984



Courtesy of the Royal Ontario Museum, Toronto

Caravans Across the Desert

Opens February 17 in Gallery 3. Members' Reception February 23

As early as the second century B.C., entrepreneurs led camel caravans across the vast deserts and through the treacherous mountain passes of Central Asia. Buyers and sellers converged at various trading centers between China and the Mediterranean to exchange luxury goods such as silk, tea, spices and porcelain. International trade continued to flourish along this network of commercial centers, which came to be known as the Silk Road, into the early twentieth century.

An exhibition of more than 300 artifacts encompassing the concepts and

products of East-West trade through the ages will begin its tour of the United States at the American Museum of Natural History on February 17. Entitled *Silk Roads - China Ships*, it was organized by the Royal Ontario Museum in Toronto and is made possible by a grant from the American Express Foundation.

Silk Roads - China Ships features a wide array of luxury trade items including silver and porcelain tea services, Japanese lacquers, and intricate embroidered Chinese silks. Also included are early maps and constella-

tion charts which illustrate the development of maritime trade, and paintings which depict the cross-cultural influences that resulted from international trade.

Silk Roads - China Ships provides a panorama of two thousand years of commerce between Europe and the Orient. The exhibition will remain at the Museum through May 12.

Members are invited to enjoy Chinese music and a cash bar at a special Members' Reception in the Hall of Asian Mammals. Please use the coupon on page 2 to register

Moving Continents

Once a land bridge connected Alaska to Asia, and Sandinavia was part of the North American continent. Join Dr. Malcolm McKenna for a slide illustrated lecture in which you will find out how the earth has changed over millions of years, and how these changes have affected plants and animals whose natural history we study today.

Page 7

For Inquisitive Children

There are many ways to learn about and explore the natural world. The avenues of exploration in **Workshops for Young People** include drawing, paperfolding, studying anatomy and listening to songs and stories.

Page 6

Man and Nature

How has our ancestry affected who we are today, and how we work in and think about the world around us? What are the basic puzzles of our lives? Join Dr. Lewis Thomas in an exploration of our remote past, our present lives, and how these merge to form a broader human view.

Page 3

Black History

The richness and diversity of Black culture and heritage is reflected in song, dance, poetry, art and history as the Museum celebrates Black History Month. Celebrate with us by attending some of the special programs and performances offered throughout March.

Page 5

Notes from the Editor

Schedules and Dreams

It's my second month as editor of *Rotunda*, and about time that I introduce myself to you, the Members. I hope that at some point many of you will also introduce yourselves to me. *Rotunda's* previous editor, Stan Orser, now works in the Development Office, and I, Ruth Q. Leibowitz, sit at the desk in the Membership Office which Stan so lovingly and expertly smoothed and polished many months ago.

The *Rotunda* is a very special newsletter with a very special readership. Because it is designed to give Members a preview of Museum activities, it's important that it arrive at your home before the information it contains is past history. I know there have been some problems in various sectors of the metropolitan area concerning the date of delivery of *Rotunda*, and while I'm not a politician, I will make

you a promise: I will do whatever is in my power to make sure that *Rotunda* does not arrive in your home too late for you to benefit from the many wonderful programs, exhibitions, and Members' activities it contains. For me, this means moving up the publication date and including events for the first half of the following month in each issue. However, there is another force in the universe which greatly affects the date on which you will receive your *Rotundas* — and that is the United States Post Office.

To study and understand the effects of U.S. mail on the delivery of *Rotunda*, the Membership Office will conduct a survey to find out which geographical areas receive their issues significantly later than others. We will then find out why this is so, and see what can be done

to alleviate whatever problems exist.

In order for this study to be successful, we need your help! During the next few months, many of you will receive postcards which request that you write down the exact date on which you receive *Rotunda*. Please fill out these postage-paid cards and return them to us as soon as possible. This will be of great help in our future endeavors to get *Rotunda* to you as fast as is humanly possible.

Remember *The Night Before Christmas* in which "visions of sugar plums danced in their heads?" Well, since beginning to work here at the Museum, visions of natural history have danced in mine. It all started after I'd been working at the Museum for a month. At home, on a sunny Sunday morning, I guiltily fried my roommate's last two potatoes.

After a delicious home-cooked brunch of scrambled

eggs and crispy, deliciously seasoned home fries, my feeling of guilt grew and grew, until that evening I could stand it no longer. I fled from my Hoboken apartment, entered the first bodega (grocery store) I found open, and purchased a 15-pound bag of potatoes for my roommate.

That night I had the following dream: Henry Schulson, Manager of Membership, enters my office with that look on his face that says "Oh boy, do I have a project for you." It seems we are going to produce a Membership program concerning potatoes. "How exciting!" I think. "We can cover the entire history of the potato! Its cultivation, its ritual significance throughout the world, its effects on the movement of populations such as the Irish, the routes of trade of potatoes and potato recipes!"

You cannot imagine how excited I felt, thinking about such a wonderful program. You cannot imagine the terror that gripped me when Mr.

Schulson said "You'll have to contact the speakers and write the program description for the *Rotunda* by the end of the week. . ."

The various fascinating topics included in the natural history spectrum do have a way of permeating the blood and the mind. This is a feeling that both people who work here and Members such as yourself share. Whether it be your own natural history dreams, reactions to or suggestions about programs, or general comments about *Rotunda* I would love to hear from you. This is your newsletter, and your input is always welcome.

It's good to be here. Best wishes for a non-Orwellian 1984!

Ruth Q. Leibowitz

* Several weeks after having this dream I found out that *Natural History* published an article about the potato by Raymond Sokolov! If you too are interested in this wonderful plant, consult the March, 1975 issue which includes a potato recipe!

ROTUNDA

ISSN 0194-6110

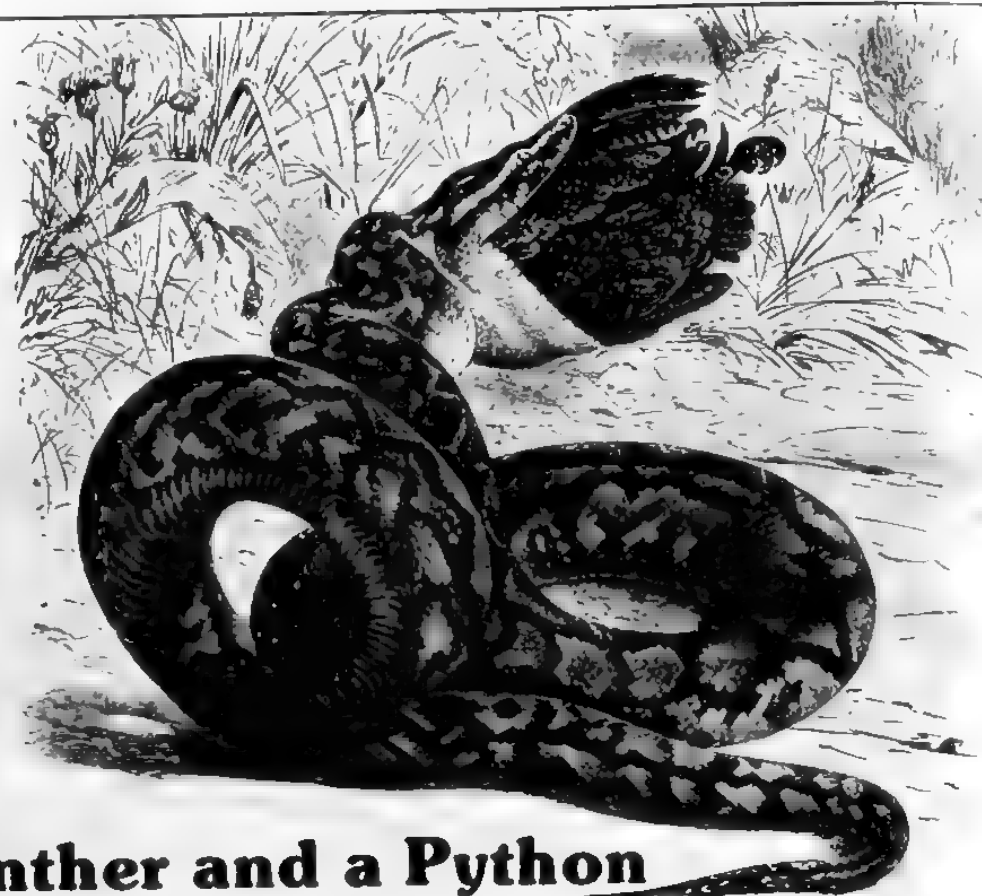
Vol. 9, No. 2
February 1984

Henry H. Schulson — Manager of Membership Services
Ruth Q. Leibowitz — Editor
Barbara E. Sawicz — Assistant Editor
Angela Soccodato — Designer
Susan Meigs — Copy Editor
Kim Hamilton — Editorial Assistant
Marion Halberg — Editorial Assistant
Alan Ternes — Editorial Advisor

Rotunda, a publication for Participating, Donor, and Contributing Members of the American Museum of Natural History, is published monthly September through April, bimonthly May through August. Publication offices are at Natural History Magazine, American Museum of Natural History, Central Park West at 79th Street, New York, N.Y. 10024. Tel. (212) 873-1327
© 1984 American Museum of Natural History. Second-class postage paid at New York, N.Y.

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 60 private foundations, 460,000 members, and numerous individual contributors.

Printed by Waldon Press, Inc., New York.



A Panther and a Python

Sunday, March 11, 11:00 a.m., 1:00 and 3:00 p.m.,

Kaufmann Theater

Free and open only to Members

A black panther cub, a rare albino raccoon, a fallow deer from the Mediterranean, a python, and some wild turkeys will join Bill Robinson in the Kaufmann Theater for our March Family Members' program. Mr. Robinson, who has presented some of our most popular family programs, will discuss the characteristics of each of these animals, and the unique adaptations that help them to survive.

Mr. Robinson will use the black panther and the albino raccoon to illustrate coloration and genetic variation in animals. The panther and fallow deer will be the focus of a discussion on the relationship between predator and prey.

Most people are familiar with the domesticated turkey that usually forms the basis of a large, delicious Thanksgiving meal. Members will learn the difference between the "supermarket" turkey and the wild turkeys the Pilgrims found when they reached the

North American shore.

Mr. Robinson also plans to bring along one or two other surprises for the audience.

A Panther and a Python is suitable for Members of all ages. Please use the adjacent coupon to register.

A Panther and a Python, Sunday, March 11. This program is open only to members of the Museum and their guests. Participating, Donor and Contributing Members are entitled to four free tickets. Associates are entitled to one. All other tickets are \$2.50.

Number of tickets: _____
Please indicate a first and second choice of times.

_____ 11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to:
A Panther and a Python, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Members' Opening for Silk Roads/China Ships, Thursday, February 23

Please indicate a first and second choice of times

_____ 5:30 p.m. _____ 6:30 p.m. _____ 7:30 p.m.

Number of people: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please mail with a self-addressed, stamped envelope to:
Silk Roads/China Ships Reception, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

Happenings at the Hayden

Sky Shows

Cosmic Mysteries. Through April 2. Are UFO's visitors from far-off stars? Could a giant meteorite crashing through the earth's atmosphere have caused the extinction of the dinosaurs? What is the ultimate fate of our universe? *Cosmic Mysteries* explores these and other fascinating questions. The answers to many of them still remain beyond our grasp.

Sky Show Times

Weekdays 1:30 and 3:30 p.m.

Saturday: 11:00 a.m. and hourly from 1:00 to 5:00 p.m.

Sunday: hourly from 1:00 to 5:00 p.m.

Admission for Participating, Donor, and Elected Members

is \$2.75 for adults and \$1.50 for children. For non-member prices please call (212) 873-8828

Laser Zeppelin.

New laser visuals combine with the music of Led Zeppelin to create a unique and dazzling experience of sight and sound

Friday and Saturday at 7:30, 9:00 and 10:30 p.m.

Admission for Participating, Donor and Elected Members is \$4.00. Tickets can be purchased in advance at Ticketron outlets, or at the Planetarium box office on the night of the show. For more information about the laser show, call (212) 724-8700.

School Shows

The Planetarium offers many programs for young children. Of special interest is *Max's Flying Saucer*. In this charming sky show, a little boy named Max sees a UFO which no one he knows can identify. That very night a friendly alien named Fhui (pronounced phooey) gives Max a ride aboard his flying saucer and teaches him many things about the universe. Perhaps the most important lesson Max learns is how to be a good observer.

For school information call (212) 873-5714. For general information call (212) 873-8828.

Up in the Sky

Saturday, February 25, 12:00 noon, Hayden Planetarium
\$2.50 for adults, \$1.00 for children. Open only to Members.

Look — up in the sky! Is it a bird or a plane? No... it's Super Grover, from Sesame Street! Join Grover and his friends Big Bird, Bert, Ernie, Cookie Monster, and other Sesame Street regulars at a special program for children ages 3 to 6, and help them explore the magic of the wonderful sky above us.

The children will be greeted by a teacher-host in the sky theater of the Hayden Planetarium, and will soon be joined by images of their favorite Sesame Street Muppets. Together, through dialogue, song, and audience participation, they explore rainbows, sunsets, and the distant twinkling stars. The children will answer questions, count to three and say the magic words to make the sky turn blue, and help Super Grover move the clouds.

When rain threatens, Oscar the Grouch pops out of his home in a dented garbage can and sings a song in praise of rainy days. And as a beautiful rainbow appears, Big Bird

will explain to the boys and girls how to look for rainbows. Throughout the program, songs with catchy words and tunes will have everyone humming along

Wonderful Sky, produced by the Planetarium in conjunction with Henson Associates, Inc. and the Children's Television Workshop, is the first Planetarium show ever created especially for pre-school aged children. To register, please use the adjacent coupon.

Wonderful Sky, Saturday, February 25.

This program is open only to Members of the Museum and their guests.

Number of children's tickets _____ X \$1.00 \$ _____
Number of adults' tickets _____ X \$2.50 \$ _____
Total payment enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Wonderful Sky*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

Super Grover invites you to help him blow the clouds away.

Members are cordially invited to
The Mack Lipkin Man and Nature Lectures

The Developing Human Species

by

Dr. Lewis Thomas

Wednesdays March 7, 14, and 21
7:00 p.m., Museum Auditorium

Wednesday, March 7: **The Remote Ancestry of Humans**

Wednesday, March 14: **The Education of Humans**

Wednesday, March 21: **The Puzzlement of Humans**

The Speaker

Dr. Lewis Thomas, distinguished scientist and author, is University Professor at the State University of New York at Stony Brook and President Emeritus of Memorial Sloan-Kettering Cancer Center. Born in Flushing, New York, Dr. Thomas was educated at Princeton University and Harvard Medical School. He has served on the medical school faculties of Johns Hopkins University, Tulane University and the University of Minnesota, and has been dean at both the N.Y.U.-Bellevue Medical Center and the Yale University School of Medicine. Dr. Thomas is a member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences and the American Philosophical Society. In 1983, he was the recipient of the Kober Medal of the Association of American Physicians.

Dr. Thomas has published over 200 scientific papers on virology, immunology, experimental pathology and infectious diseases. Dr. Thomas received the National Book

Award in Arts and Letters for *The Lives of a Cell* and the American Book Award for *The Medusa and the Snail*. His third book of essays, *Late Night Thoughts on Listening to Mahler's Ninth Symphony* and the memoirs of his career, *The Youngest Science* were published last year.

The Man and Nature Lectures

The Mack Lipkin Man and Nature Lectures were established to honor Dr. Lipkin's significant contributions to the field of biomedical science. They mark the resumption of the popular Man and Nature Lectures that were held at the Museum from 1965 to 1971. The Man and Nature Lectures bring prominent scientists to the Museum to discuss their work and its impact on critical challenges facing humanity. Past lecturers have included Margaret Mead, Jacob Bronowski, and George Wald. The lectures represent part of the Museum's continuing commitment to inform the public of current research and knowledge in the natural sciences.

The Mack Lipkin Man and Nature Lectures

Wednesdays, March 7, 14, and 21

Participating, Donor and Contributing Members are entitled to four series tickets at the price of \$10 for the series. Associates are entitled to one. All other series tickets are \$15. Only tickets for the series can be bought at this time. If available, tickets for individual lectures will be sold on the day of the lecture.

Number of Members' tickets _____ X \$10.00 \$ _____
Number of non-members' tickets _____ X \$15.00 \$ _____
Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Man and Nature Lectures*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024.

How the Devious Lizard Got A Head

Part I of a Two-part Dinosaur Tale

A Dinosaur of Distinction

"Having a dinosaur in your museum in the early 1900's, was like sending a rocket to the moon," said Gene Gaffney, Curator of Fossil Reptiles at the Museum. "Turn of the century paleontology was a big deal, like NASA is today." And in 1906 our brontosaurus was the first large dinosaur to be mounted at any museum in the world. It is still one of only 5 mounted brontosaurus skeletons.

But it has an even more interesting distinction: It is the only brontosaurus skeleton to retain the head modelled after the one that Professor Othaniel C. Marsh erroneously assigned to it in 1883. Contained in this head is the story of Vertebrate Paleontology at the Museum, its first leader, Henry Fairfield Osborn, and of changing ideas in museum research.

The First Brontosaurus: A Headless Specimen

On August 9, 1879 a Colorado schoolmaster reported the discovery of two new dinosaur quarries at Como Bluff, Wyoming to Professor Marsh, one of the two leading paleontologists of that time. Soon afterwards, Marsh's assistant removed the first large brontosaurus ever found.

It took all winter for Marsh's men to exhume the bones of this great beast. A tent that was placed over the quarry provided only limited protection from the blowing wind and snow. On February 5, 1880, one worker wrote that he was digging at the bottom of a narrow pit 30 feet deep. Temperatures wavered between 20 and 30 degrees below zero, as snow blew down into the pit, covering the bones almost as fast as they were unearthed.

The physical hardship paid off. The resulting brontosaurus, mounted at Yale's Peabody Museum in 1929, was and still is one of the most complete skeletons of its kind ever found. It lacked only a few neck bones, the end of its tail and assorted foot bones. Apparently it also lacked a head.

Perhaps this rather notable lack posed less of an obstacle to Marsh than it should have. The reconstruction of brontosaurus published by Marsh in 1873 did have a head, but it was based on a badly crushed specimen found at Quarry 13 about 4 miles away from the rest of the brontosaurus skeleton. In a revised reconstruction published several years later, Marsh used a slightly more complete skull taken from a site nearly 400 miles away.

These reconstructions were the first published drawings of what brontosaurus or any of its sauropod relatives may have looked like. While it was not unreasonable for Marsh to assume that the large skulls he used may have belonged to an animal the size of brontosaurus, he neglected to mention that neither of them was found with the rest of the skeleton; they didn't necessarily belong to the animal.

"Marsh needed a head, so he guessed," explained Professor John McIntosh, a world authority on sauropods. "Most of his guesses were remarkably accurate but this one was not."

As it turned out, the head really belonged to a related sauropod, the stocky *Camarasaurus*. Quarry 13, from which Marsh got the head, has since yielded parts of four such skeletons and some bones from *Diplodocus*, another important sauropod, but no identifiable remains of brontosaurus.

Of course, none of this was known to Marsh in 1883. Paleontologists at the turn of the century did not know very much about these great beasts. The very first dinosaurs had been found only 34 years earlier in 1845. Dinosaur finds preceding the Como Bluff dig had been limited and fragmentary. None had included heads or even complete necks or tails. As a result, some of the early reconstructions were wildly inaccurate. The first *Iguanodon*, for example, was depicted with what turned out to be a claw on the end of its nose!

But turn of the century paleontology was handicapped by more than limited knowledge. Two of the great early dinosaur hunters were embroiled in a notorious feud, a rivalry that was carried as far as the front page of *The New York Herald*. In a race to be the first to publish, Marsh and his arch rival Edward Drinker Cope named new dinosaurs almost as fast as they could dig them up, basing their descriptions on bits of neck or tail. This contest was due in part to the fact that in paleontology, discovering a specimen does not guarantee fame or prestige to the discoverer; rather the first person to publish a description gets credit for a new species, and the right to name it.

In their haste, Marsh and Cope generated so many double and triple names for the same dinosaur that it took scientists decades to sort them all out. Marsh's brontosaurus turned out to be a larger individual of *Apatosaurus*, another dinosaur that he himself had discovered two years earlier!

The American Museum of Natural History Brontosaurus: Headless Again

Henry Fairfield Osborn, who started the Department of Vertebrate Paleontology at the Museum of Natural History in 1891 and went on to become its president for 25 years, understood the popular appeal of Marsh's dinosaurs. Twenty years after Marsh's find at Como Bluff, Osborn organized the first Museum expedition there. That summer the remains of an enormous brontosaurus were found just downstream from the site of some of Marsh's most famous discoveries.

During the next eight years the Museum collected vast numbers of sauropods from these and other deposits in Southeastern Wyoming. This time great quantities of bone were shipped to New York, instead of to the Peabody Museum in New Haven, for which Marsh had previously done his collecting. In 1898 alone, over 100 boxes containing 60,000 pounds of bone were shipped back to the American Museum of Natural History, in two special railroad cars provided by Museum trustee J. Pierpont Morgan.

It took an entire summer to remove the giant reptile's bones from the earth and prepare them for shipment. The Museum was painstakingly careful; instead of simply extracting the fractured bones and risking severe damage, whole blocks of skeletons were taken out and wrapped in a plaster jacket. This innovation enabled the Museum to build and exhibit its brontosaurus in less than a decade. In contrast, Marsh's beast would not be ready for display at Yale's Peabody Museum for another 20 years because the bones were so badly damaged when they were removed from the quarry.

Mounting the enormous dinosaur occupied Museum staff almost continuously for seven years. "Nearly two years were spent in carefully removing

the bones from the surrounding rock, piecing together, cementing and restoring the missing parts of bone," according to a 1906 account by Museum Curator, W. D. Matthew. "The articulation and mounting of the skeleton and modelling of the missing bones took an even longer time." Of the final mounted brontosaurus, about 66% is from the principal specimen. The right thigh bone and a few other bits were taken from an incomplete brontosaurus that was found nearby. The end of the tail was taken from another individual, and parts of the right foot from a fourth. A few toe bones come from other skeletons and the rest is plaster. There was still no head.

On With Its Head!

Head or no head, Osborn did not intend to mount his dinosaur without one. Chief Preparator Adam Hermann created a likely looking head modelled after jawbones from Marsh's 1879 brontosaurus and a large *Camarasaurus* skull from the Museum's collection. The entire skull and first four neck bones were sculpted from plaster and based on Marsh's second restoration.

The creature's stance had to be worked out by fitting together the available bones, a task comparable to completing a jigsaw puzzle with half the pieces either broken or missing.

Notwithstanding the imaginations of movie directors and Hanna Barbara, no one has ever seen a dinosaur in the flesh. Unable to examine a living brontosaurus, preparators dissected the limbs of alligators and other living reptiles. Our brontosaurus originally looked slightly bow-legged until new evidence made it clear that its legs must have been completely rotated under its body, much like our own.

At last, on February 10, 1905, our brontosaurus was completed, or seemed to be. It was mounted with the same head it bears to this very day.

New evidence was to be presented in 1915 that would seriously challenge the head our brontosaurus bore upon its vertebrae. The March issue of Rotunda will complete this tale of paleontological intrigue.—Darrel Schoeling



Chief Preparator Adam Hermann, creating a "likely looking" head



Our beloved brontosaurus. Perhaps it's just as well that the head is not shown in this photograph.

"Come Together People of Africa, from Wherever You Abide . . ."

Black History Month

at the Leonhardt People Center, and the Kaufmann and Linder Theaters.
Saturdays and Sundays in February. Free with Museum admission.



Langston Hughes is one of several black poets whose works will be read this month.

In 1926 the first nationally organized celebration of Black history and culture took place in a small number of schools and churches. Called Negro History Week, it was launched with only a handful of programs by author and historian Carter G. Woodson. Woodson's Association for the Study of Afro-American Life and History (ASALH) became the first organization to promote a serious and scholarly study of Black history.

Throughout the civil rights movement of the sixties and seventies, ASALH acted as a

national clearinghouse for information on the Black experience. In 1980, Woodson's nationwide celebration of Black history was expanded from one week to the entire month of February.

For over a decade the American Museum has participated in this observance of African-American traditions. This year, the African-American program of the Department of Education offers a series of programs on music, drama, arts, crafts, and history that illustrate the cultural richness and diversity of

Black heritage. The programs will run continuously in the Leonhardt People Center, Saturdays and Sundays, from 1:00 p.m. to 4:30 p.m.

Each weekend, a different theme will be emphasized. On **February 4 and 5**, the theme is "Creativity." There will be a poetry reading featuring the work of Donald Greene, Langston Hughes, Niki Giovanni, and others. Rafala Green will give a lecture demonstration of contemporary Black women artists, and the interpretive dance group, Variables of Seven, will present a

"Salute to Our African Heritage through Dance."

A highlight of this weekend will be a dramatic presentation by the *Goptooth Girlfriends*, a group of female poets, writers and actresses who use poetry to dramatize the lives of third-world women. The program, entitled "Looking Back", will be presented in the Kaufmann Theater on **Sunday, February 5**, at 2:00 and 3:30 p.m.

"Africa" is the theme on **February 11 and 12**. Presentations will include a demonstration on African carving by Mensa Dente, a program of Liberian folklore, dance, and music by Nymah Kumah, and a lecture by L.D. Frazier on Egypt.

The Apprentice Dance Company and their Children's Performing Workshop will perform African festival dances in the Kaufmann Theater on **Sunday, February 12**, at 1:00 and 3:00 p.m.

Entitled "A Touch of Folklore and More", this program includes *Lamba*, a dance done for passages in life such as births, deaths, and weddings, and *Goombe*, which calls all dancers, saying "Come together, people of Africa from wherever you abide. Bring forth your songs, your dances, your rhythms to the dancing ground and we will fuse with and create from that ancient source." This program invites audience participation.

February 18 and 19 will offer programs on "Black Struggles and Political Move-

ments", including presentations on Marcus M. Garvey and Nat Turner. "Oral Traditions" will be the theme on **February 25 and 26**, when programs will include Afro-American songs and games and "Ananse Stories", traditional African folktales with musical accompaniment, and the tales of the Gullah people.

A special jazz tribute to pianist McCoy Tyner and drummer Max Roach, performed by the Montego Joe Sextet, will be presented in the Kaufmann Theater on **Sunday, February 26**, at 1:00 and 3:30 p.m. McCoy Tyner, an original member of the John Coltrane Quartet, was one of the first jazz pianists to infuse an African beat into his music. Max Roach is recognized as one of the pioneers of modern drumming style in his work with musicians such as Charlie Parker and Dizzy Gillespie.

Each weekend, short films on Black history and culture will run continuously in the People Center. An exhibit of African Children's Photographs and a slide show called "Leafing Through the Pages of Black History" will be on display throughout February. Please see Museum Notes for People Center hours.

A complete listing of programs appears in the Calendar on page 8. For information on individual programs and performances, please call (212) 873-1300, ext. 514. Seating for all programs is limited and will be on a first-come, first-served basis.

Diving for Knowledge

Wednesday, February 29, 7:30 p.m., Main Auditorium
\$5.00 for Members, \$6.00 for non-members

Theoretically, 45 people should not have met their watery deaths on the fateful night of July 25, 1956. The *Andrea Doria*, in her day, was Italy's most luxurious and modern ocean liner. Built for comfort as well as safety, she was equipped with radar and constructed to withstand accidental collisions with other ships. Yet, wrapped in heavy fog, the *Andrea Doria* collided with the Swedish liner *Stockholm* (which also possessed radar), and took 11 grisly hours to sink beneath the sea. What went wrong?

Peter Gimbel was the first person to dive and photograph the *Andrea Doria*, where she lay beneath 240 feet of water on the continental shelf approximately 60 miles south of Nantucket (265 miles east of the American Museum of Natural History). His film *ANDREA DORIA*:

The Final Chapter, co-produced with his wife Elga Andersen, records the attempt of a team of scuba divers to solve two of the mysteries surrounding the wreck: Did the *Doria's* safes contain the treasure which they were rumored to contain? And why was such a well-constructed ship unable to evade its eventual doom?

Gimbel and his crew explored the wreck using new techniques of saturation diving which allow divers to work at great depths for long periods of time. The film depicts these diving techniques, as well as what they enabled the divers to see - namely, the 700-foot *Andrea Doria* on her side, festooned with snagged fishing nets, and the marine organisms which made the wreck their home.

The film also follows the recovery of one of the two

mystery safes, while Hurricane Dennis raged. The recovered safe is now in a holding tank at the Coney Island Aquarium. It has yet to be opened.

Mr. Gimbel is a veteran underwater explorer and photographer whose work includes *Blue Water, White Death*, a film of confrontation between man and shark. He will introduce the program.

This program is presented by the American Littoral Society. To order tickets please enclose a stamped, self-addressed envelope along with payment and a note including your membership category, number of tickets requested and amount enclosed. Mail these to: *The Andrea Doria Film Program*, the American Littoral Society, Sandy Hook, Highlands, N.J. 07732. For further information, please call (201) 291-0055.

The *Andrea Doria's* safe is hoisted aboard a salvage vessel.



Workshops for Young People



Learning to Draw Animals

Grades 6, 7 & 8
Four Sundays, March 4, 11, 18 and 25
1:00–2:30 p.m.
Fee: \$22.00 (Members \$20.00)

Using a different exhibit hall each week as a drawing studio, students study the basic structures and shapes of animals. Beginning with skeletal anatomy, then adding important muscles, students see how an animal takes form. Quick sketching exercises give practice in drawing skills. Supplies are provided. Taught by Stephen C. Quinn, Senior Principal Preparator-Artist in the Museum's Exhibition Department.

The World of Insects

Grades 7, 8 & 9
Six Sundays, March 4, 11, 18, 25; April 1 and 8
10:30 a.m.–12:00 p.m.
Fee: \$30.00 (Members \$27.00)

From beetles to butterflies to cockroaches, students investigate the habits and habitats of this most successful group of animals. Each week students examine different insects. They learn about insect behavior by studying external and internal anatomy and through observation of live specimens. From reproduction, to defense, camouflage, and mimicry, students gain a greater appreciation for insect biology, adaptability and diversity.

Taught by Betty Faber, Research Associate in the Museum's Entomology Department.

Parent/Child Science Explorations

Grade — Kindergarten youngster with one parent
Five Saturdays, March 3, 10, 17, 24 and 31
3:00–4:30 p.m.
Fee: \$50.00 (includes parent & child) (Members \$46.00)

Limited to 10 youngsters with 10 parents

Introductory science classes based on an interactive approach that includes guided group discussion, hands-on activities, games and experiments. Puzzles, models of dinosaurs, a live animal demonstration and creative movement are utilized. The activities are designed to help develop a scientific approach to exploration based on a child's natural curiosity. An essential part of the course is parent involvement.

Taught by Susan Bromberg Kleinsinger, Early Childhood Education Specialist.

Nature Activities For The Very Young

Grades 1 & 2
Four Sundays, March 4, 11, 18 and 25
Section A: 10:15–11:15 a.m.

or
Section B: 11:30 a.m.–12:30 p.m.
Fee: \$20.00 (Members \$18.00)

Children participate in springtime nature activities, from growing seeds to learning about different kinds of leaves. They discover animals that are beginning to stir in the warming ground and those returning by air from the south. Using the Alexander M. White Natural Science Center, children explore the seasonal changes that occur in the surrounding city environment.

Taught by Mary Croft, Instructor in the Museum's Department of Education.

Storytelling Around The World

Grades 2 & 3
Four Saturdays, March 3, 10, 17 and 24
Section A: 10:15–11:15 a.m.

or
Section B: 11:30 a.m.–12:30 p.m.
Fee: \$20.00 (Members \$18.00)

Children celebrate the coming of spring with myths, legends, folktales and poems from other cultures. Through the art of storytelling, young listeners experience the wonders of nature and the hopes and dreams of many peoples. Programs combine traditional literature with some contemporary stories, songs and "act-outs" involving group participation.

Taught by Susan Powers, Storyteller and Media Specialist

Amazing Sea Creatures

Grades 3, 4 & 5
Four Sundays, March 4, 11, 18 and 25
3:00–4:30 p.m.
Fee: \$20.00 (Members \$18.00)

Starting with shells and ending with sharks, children play games beneath the great whale, watch films and gain a greater appreciation for the under-sea world. Children investigate a whale vertebra, baleen, and the inside of a shark, and they handle a living periwinkle. They take home a shell made out of plaster, a shark's tooth picture and a fish print.

Taught by Sydney Buffum, Senior Instructor in the Museum's Education Department.

Mask-Making

Grades 4, 5 & 6
Two Sundays, April 1 and 8
3:00–5:00 p.m.
Fee: \$12.00 (Members: \$10.00)

In this two-session course, children are introduced to African and Native American cultures. Using the Museum's exhibition halls, and making their own masks, they begin to understand different ways of life and the spiritual significance behind the masks. Not only do they develop artistic skills, they gain a greater awareness of themselves. Materials are provided.

Taught by Juliette Leff, Art Education Specialist.

Saturday Half-day Workshops

Sessions run 10:30 a.m. until 1:30 p.m. Students should bring a bag lunch.

The World of Amphibians

Grades 5, 6 & 7
March 3
Fee: \$10.00 (Members \$9.00)

What is an amphibian? How do frogs communicate? Observe a frog eating. Discuss camouflage, skin toxins and reproduction. Using the Hall of Reptiles and Amphibians as well as slides, students investigate exotic and common representatives of this fascinating group of animals. They make a small terrarium habitat to take home.

Taught by Michael Klemens from the Museum's Herpetology Department.

Origami

Grades 5, 6 & 7
March 10
Fee: \$10.00 (Members \$9.00)

Origami is the Japanese word for the centuries-old international art of folding single sheets of paper, without scissors or paste, to create objects. This introductory workshop will include the folding of a sailboat, a strawberry, a bunny, a fox, and perhaps a panda.

Taught by Michael Shall, Professional Paper Folder and volunteer origami specialist at the Museum

Asian Puppetry

Grades 6, 7 & 8
March 17
Fee: \$10.00 (Members \$9.00)

Celebrating the arrival of the "Silk Roads-China Ships" special exhibit, students learn how puppetry reflects and reveals Asian cultures. Students reenact the journey of the first pilgrim from China to India seen through the eyes of his mischievous companion,

a monkey. Students also make a simple shadow puppet.

Taught by Sue Gronewald, Asian specialist in the Museum's Education Department.

Exploring With The Microscope

Grades 6, 7 & 8
March 24
Fee: \$10.00 (Members \$9.00)

Learn how to use the microscope. Learn the shape of a salt crystal, and the differences among various types of plant and animal cells. Students prepare their own slides and view living organisms under the microscope.

Taught by Juanita Muñoz, Instructor in the Museum's Education Department.

The Scaly World of Reptiles

Grades 4, 5 & 6
March 31
Fee: \$10.00 (Members \$9.00)

Feel a live snake. Watch a lizard feed. Can a turtle breathe underwater? Students observe and discover more about the amazing adaptations and behaviors of these animals. Through slides and a visit to the Hall of Amphibians and Reptiles, students explore habitats, defense and locomotion.

Taught by Dave Brody of the Museum's scientific staff.

Animal Behavior

Grades 7, 8 & 9
April 7
Fee: \$10.00 (Members \$9.00)

How do earthworms communicate? By performing simple experiments, students discover how changes in the environment can cause specific behavior in animals. Using mostly invertebrates, students arrive at their own conclusions by observing how animals react to certain stimuli.

Taught by Juanita Muñoz, Instructor in the Museum's Education Department.



I would like to register for the following lecture series:

Course(s):

Day(s): Time:

Price: (Note that Participating, Donor and Elected Members get a 10% discount on many courses.)

Name:

Address:

City: State: Zip:

Daytime Phone:

Membership category:

I enclose a check payable to the American Museum of Natural History, and a self-addressed, stamped envelope. Mail to Afternoon and Evening Lecture Series, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024

The Lectures That Come in Spring

Beginning February 21, 1984



Masters of the Wok, to be premiered this spring

Spring brings more than rain, warmth and flowers. Beginning February 21, the Department of Education offers you a medley of afternoon and evening lectures, covering everything from edible plants to Indian potlatches. You can choose to be a spectator at fascinating filmed scenes and the recipient of unusual knowledge, or the creator of artwork and cuisine that have roots in many different cultures and times.

Multiple aspects of anthropology are combined in courses such as *Objects of Bright Pride Revisited*, an introduction to Northwest Coast Indians and the significance of their art. Totem poles and shamanistic charms are among the art objects to be discussed, regarding both their beauty and their historical and ritual significance.

Silk Roads — China Ships complements a special new exhibit of the same name, opening at the Museum on February 17 (see page 1 for article and Members' Reception).

Archeology, Buddhism, legends and ceramics are just a few of the topics to be featured in this series, which explores routes of trade that flourished thousands of years ago up until the early twentieth century, linking ancient world powers of the East and West.

Anthropology Through Film features nine films which depict cultures and rituals as diverse as those of the Hopi Indians, ritual shark hunters of Papua New Guinea, and members of a college fraternity in Pennsylvania. Several of the films are being premiered as part of this program.

Other courses offered this spring include hands-on crafts such as weaving and origami, and field trips on land and sea.

For registration and complete information about spring courses, please consult the January *Rotunda* or call the Education Department at (212) 873-7507 for a free brochure.

Museum Notes

Special Exhibitions

Silk Roads/China Ships. February 17 through May 12. An exhibit of more than 300 artifacts illustrating 2,000 years of commerce in goods, technology, art and ideas which traveled the major trade routes between Europe and the Orient.

Right Through the Roof! The Wethersfield Meteorites. Through March 31 in the Arthur Ross Hall of Meteorites. Two meteorites which struck houses in Wethersfield, Connecticut in 1971 and 1982 are on exhibit. Says Martin Prinz (Mineral Sciences), "The odds of (a meteorite) striking a town, much less a house, are miniscule. The probability of two meteorites striking houses in the same town is incalculable."

March at the Museum

China and the Silk Route. Weekends from 1:00 to 4:30 p.m. Leonhardt Peoples Center.

Workshops for Young People. Begin Saturday, March 3.

Man and Nature Lectures. Wednesdays, March 7, 14 and 21. Reservations required.

A Panther and a Python with Bill Robinson. Sunday, March 11. Reservations required.

Good Time Duo. Sunday, March 18, at 2:00 p.m.

Programs and Tours

Museum Highlights Tours. For the new Museum visitor as well as the veteran Museum goer, the Museum Highlights Tours offer fascinating glimpses into the history and exhibits of the Museum's most popular halls. The tours leave regularly from the second-floor Information Desk. If you wish to join a free tour, please ask at the

information desks for specific tour times.

Discovery Tours. The Museum offers exciting and unusual tours of exotic lands in company with Museum scientists, archeologists, anthropologists, historians, and naturalists. For more information about tours and itineraries, write to Discovery Tours at the Museum or call 873-1440.

Natural Science Center. The Center introduces young people to the varied wildlife, plants, and rocks of New York City. Some exhibits include live animals. The Center is open Tuesday through Friday, from 2:00 to 4:30 p.m., and Saturday and Sunday from 1:00 to 4:30 p.m. The Center is closed Mondays.

People Center. Ethnic programs featuring dance, music, films, lectures, and workshops are presented on weekends from 1:00 to 4:30 p.m.

Discovery Room. Children are delighted to touch and handle natural history specimens in imaginative "discovery boxes." Starting at 11:45 a.m., free tickets are distributed on a first-come, first-served basis at the first-floor Information Desk. The room is open only on weekends from 12:00 to 4:30 p.m. Recommended for ages 5 to 10.

Naturemax Information

The Naturemax Theater is equipped with a movie screen four stories tall and sixty feet wide, as well as an extraordinary sound system and a projector for showing IMAX films, made ten times larger than ordinary movies. The theater is located off the 77th Street Lobby near the Great Canoe. Schedules and films may vary, so call the Naturemax Recording for current information before visiting the theater: (212) 496-0900. Museum Members receive a 50% discount.

Museum Information

Museum Hours. Monday, Tuesday, Thursday, Sunday: 10:00 a.m. to 5:45 p.m. Wednesday, Friday, and Saturday: 10:00 a.m. to 9:00 p.m.

Food Express Hours. Daily from 11:00 a.m. to 4:45 p.m.

American Museum Restaurant. Luncheon is served daily from 11:00 a.m. to 3:00 p.m. Afternoon tea is served from 3:00 to 5:00 p.m. Dinner is served Wednesday, Friday, and Saturday evenings from 5:30 to 7:30 p.m. The American Museum Restaurant is located next to the cafeteria, in the basement. Museum Members receive a 10% discount.

Museum Parking Lot. Located on 81st Street. Open Monday through Thursday: 9:30 a.m. to 9:30 p.m. Friday through Sunday: 9:30 a.m. to 12:30 a.m. Rates are \$6.00 for cars, \$7.00 for buses. Parking is limited.

Lion's Lair. Relax and enjoy refreshments with the animals in one of the halls. Wednesdays: 3:30-7:00 p.m. Saturdays, Sundays and most holidays: noon-5:00 p.m.

Southwest Research Station. Museum Members have visiting privileges at this outpost. If you are planning a visit of less than one week, write ahead for details. Southwest Research Station, Portal, Arizona, 85632, or call (602) 558-2396. For visits of more than one week, applications should be made to the Deputy Director of Research, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, or call (212) 873-1300.

Coat Checking. For your convenience the coat check room is located in the basement next to the cafeteria, and on the second floor at the main entrance. There is a 50¢ charge per item.

The Drifters

Tuesday, February 14, 7:30 p.m.
Main Auditorium
Free and open only to Members

The immediate ancestors of modern North American mammals such as armadillos and opossums did not originally live on this continent. How did they get here? In Southern Alaska paleontologists have uncovered a fossil record for certain warmth-loving plants which never lived at that latitude. What is the explanation?

Whether you stand atop a small island or giant continent, the land beneath your feet continues to move and change in ways that profoundly affect not only the physical appearance of the earth, but the plants and animals that have evolved here.

As some land masses moved, they carried plant and animal passengers with them. When bodies of water dried up or land rose above sea level, bridges were formed and organisms journeyed over them.

In *Tectonic Travelers* Dr. Malcolm McKenna (Curator, Department of Vertebrate Paleontology) will discuss fossil and modern animals both as passengers and nomads on a constantly changing planetary surface. He will speak of geological processes such as continental drift and land bridge formation which have

affected the distribution of flora and fauna over millions of years.

Dr. McKenna will elucidate biogeographical paradigms which are as fascinating and enigmatic as their names suggest. "Noah's Ark" and "grounded Viking funeral ships" are two such theories, which help explain how various terrestrial plant and animal species are what and where they are today.

Tectonic Travellers is free and open only to Members. Please use the adjacent coupon to register.

Tectonic Travelers, Tuesday, February 14. This program is open only to Members of the Museum and their guests. Participating, Donor and Contributing Members are entitled to six free tickets. Associates are entitled to one. Additional tickets may be purchased at \$4.00 each.

Please send me _____ tickets

Name _____

Address _____

City _____

State _____

Zip _____

Daytime Phone _____

Membership category _____

Please mail with a self-addressed, stamped envelope to *Tectonic Travelers*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY, 10024

Sun

Mon

Tue

Wed

Thu

Fri

Sat



6 Members of the Archeology Tour to Mexico arrive in Mexico City. For information on future trips, call (212) 873-1440.

Scott Joplin

1 7:45 p.m. Amateur Astronomers Association. Kauffmann Theater. Free

New Moon

2 7:00 p.m. Systematics Discussion Group. Room 419. Free.

3 7:30 p.m. The Dream Keeper Speaks: The World of Langston Hughes. Kauffmann Theater. Free.

4 11:00 a.m. New York Map Society. Room 129. Free.
1:00-4:30 p.m. Black History Month. Creativity. Focus is on poetry, the visual arts, and dance. Leonhardt People Center. Free. (See page 5.)
Moon is at apogee.

8

9 First Quarter (half moon)



Billie Holiday

11 1:00-4:30 p.m. Black History Month: Africa, Egypt Through the Eyes of L.D. Frazier — Civilization along the Nile River. An African Craftsman with Mensa Dente. Liberator folklore, dance, and musical instruments Authentic African Arts with Nymah Kurnah. Leonhardt People Center. Free. (See page 5.)

5 1:00-4:30 p.m. Black History Month. Creativity: Focus is on poetry, the visual arts, and dance. Leonhardt People Center. Free. (See page 5.)
2:00 and 3:30 p.m. "Looking Back" Gaptooth Girlfriends. A group of poets, writers, and actresses in a dramatic presentation. Kauffmann Theater. Free. (See page 5.)

13

14 7:30 p.m. Tectonic Members' Program. Free and open only to Members. Reservations required. Auditorium. (See page 7.)

15

16 Full Moon

17 Silk Roads-China opens in Gallery 3. (See page 1.)
Moon is at perigee.

18 1:00-4:30 p.m. Black History Month. Black Struggles and Political Movements: In Praise of Marcus Garvey with Quasima Tukufu. Life Styles of African-American Muslims with Sahid Samad. Nat Turner, Alias the Prophet: a dramatic piece by Clifton Powell. Leonhardt People Center. Free. (See page 5.)

12 1:00-4:30 p.m. Black History Month. Leonhardt People Center. Free. (See page 5.)
1:00 and 3:00 p.m. A Touch of Folklore with the Apprentice Dance Company and the Children's Performing Workshop. Kauffmann Theater. Free. (See page 5.)
2:00 p.m. New York Shell Club. Room 419. Free

2:00 p.m. New York Shell Club. Room 419. Free

19 1:00-4:30 p.m. Black History Month. Leonhardt People Center. Free. (See page 5.)
1:00 p.m. American Celiac Society. Room 319 Free

20

21 8:00 p.m. Entomological Society. Room 426 Free.
Education Department Spring Lectures begin today. (See page 7.)

22

23 7:30 p.m. Special Members' Viewing. Silk Roads — China Ships. Reservations required. (See article page 1.)
8:30 p.m. N.Y. Microscopical Society. Room 419. Free
Last Quarter (half moon)

24

25 12:00 p.m. Wonderful Sky. Members' Childrens Program. \$2.50 for adults, \$1.00 for children. Reservations required. Sold Out.
1:00-4:30 p.m. Black History Month. Oral Traditions: African-American Songs and Games. Ananse Stories — Traditional African Folktales. Musical Stories of the Oral Tradition. Leonhardt People Center. Free. (See page 5.)

2:00 p.m. N.Y. Turtle & Tortoise Society. Room 129 Free
2:00 p.m. N.Y. Paleontological Society. Room 426. Free.

26 1:00-4:30 p.m. Black History Month: Oral Traditions: Tales of the Gullah People. Ananse Stories — Traditional African Folktales. Musical Stories of the Oral Tradition. Leonhardt People Center. Free. (See page 5.)
1:00 and 3:00 p.m. Jazz Tribute to Pianist McCoy Tyner and Drummer Max Roach, featuring the Montego Joe Sextet. Kauffmann Theater. Free. (See page 5.)



Louis Armstrong

29 7:30 p.m. Diving for Knowledge. Reservations required from the American Littoral Society. Auditorium. (See page 5.)

February 1984
American Museum of Natural History

ROTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol 18, No 1 January 1993



Yemenite Jewish women with goat



Jewish men praying in Sanaa, Yemen



Jewish woman in Haidan, Yemen

Jews of Yemen: A Vanishing Culture

Thursday, January 7

7:00 p.m.

Main Auditorium

\$7 for Members, \$10 for non-Members

Beth Shearim, the most famous Jewish cemetery in the Near East during the third century CE (common era), contains a Yemenite catacomb. This burial site is difficult to reach. Its entrance is overgrown, and the inscriptions in red pigment have been almost obliterated by time and weather. Those that can still be read form the first historical evidence of an established Jewish community in Yemen.

For centuries the Jews of Yemen enjoyed freedom and prosperity. But with the suicide of the last Jewish king — according to legend he rode his horse into the sea — and the increasing power of Islam, Yemenite Jews were stripped of their land, forbidden to farm, and confined within small areas of villages and of the capital of

Sanaa. In the crowded ghetto of Sanaa, Yemenite Jews created a style of architecture known nowhere else in the Middle East. They did the only work allowed them — that of artisans — becoming skilled silversmiths, copper smiths, weavers, woodworkers, and masons.

Between 1948 and 1950 large numbers of Yemenite Jews emigrated to Israel. Little was known about those who remained behind.

In *Jews of Yemen: A Vanishing Culture*, filmmaker Johanna Spector takes the viewer to modern Israel and into the homes and ceremonial areas of modern Jews of Yemenite descent. Some of the people the film visits, like the young boys who go to school to learn Aramaic and the special Yemenite pronunciation of Hebrew,

retain distinct aspects of their Yemenite heritage. Others, the children of mixed marriages, are much less familiar with their grandparents' culture.

The film includes footage of traditional Yemenite celebrations, rituals, dances, and music. Spector's camera enters the homes of several Yemenite families as they celebrate the Passover Seder in ways that are unique to Yemenite Jews.

In one segment — a pre-wedding ceremony — a young bride wears anklets to protect her from the evil eye, a pearl-studded headdress, a gold brocade coat, and vast amounts of jewelry, including necklaces, earrings and six bracelets worn in a prescribed order. (All jewelry is considered magical, since its tinkling is thought to

drive away evil spirits.) The bride is seen celebrating in the company of women only, for women do not dance or sing in the company of men. Only at certain points of the prenuptial ceremony are her father, brothers and uncles permitted to be present.

Anthropologist Johanna Spector, who is a music ethnologist as well as a filmmaker and director, will introduce the film and answer questions from the audience at its conclusion. Her film *2,000 Years of Freedom and Honor: The Cochon Jews of India* premiered at the Museum last January; *Jews of Yemen* had its premiere here in 1986.

The film is 78 minutes long. Use the January Members' programs coupon on page 3 to register for the program.

Members' Museum Tours

The Geology of Southern Asia

Friday, January 8
3:00, 4:30, and
6:00 p.m.

Members can explore the geological diversity of Asia with Sidney Horenstein, the Museum's coordinator of environmental public programs. He'll lead tours through the halls of Asian Mammals and Asian Peoples to observe the wide variety of topographic features found throughout the world's largest continent.

Tickets are \$16 and available only to Participating and Higher Members. Call (212) 769-5606 for ticket availability and information.

Members' Adult-Child Workshop

Making a Calendar

Sunday, January 10
10:30 a.m.-noon and
1:00-2:30 p.m.

Members can set their own agendas at this calendar making workshop. June Myles will provide the basic skeleton and plenty of materials for kids and parents to create their own personal calendars for the new year.

The workshop is geared toward children between the ages of 6 and 9. Tickets are \$26 per couple and available only to Participating and Higher Members. Call the Membership Office at (212) 769-5606 for information about tickets.

Robbers, Assassins, and Manipulators: Some Bees I Have Known

Thursday, January 14
7:00 p.m.

Curator Jerome G. Rozen has worked in the Department of Entomology since the 1940s, and he's traveled around the world to conduct research. At *Robbers, Assassins, and Manipulators: Some Bees I Have Known* he'll talk about some of the fascinating behavior he's observed, focusing on the evolution of cleptoparasitic bees — remarkable creatures whose survival depends on their skill at theft and murder.

The program will take place in the Kaufmann Theater. Tickets are free for Members.

and \$7 for non-Members. Use the coupon on page 3 to register.

Members' Workshop

Identifying Rocks and Their Minerals

Tuesday, January 19, and
Tuesday, January 26
5:30-7:30 p.m.
SOLD OUT

Geologist Sidney Horenstein hosts a two-part workshop that shows how to identify and classify the major groups of rocks. He'll use actual specimens and Museum exhibits to explain the differences between igneous, sedimentary and metamorphic rocks.

Tickets are \$40 and available only to Participating and Higher Members.

Behind-the-Scenes Tours of the

Department of Entomology

Thursday, January 21,
5:00-9:00 p.m.
Saturday, January 23,
10:30 a.m.-4:00 p.m.

Come upstairs to the Museum's fifth floor to visit collection areas and research offices that are never open to the general public. Representatives from the Department of Entomology's curatorial and scientific staff will talk to Members about their research and fieldwork and display specimens from the biggest collection of any of the Museum's scientific departments — a collection that numbers more than 17 million insects and arachnids.

Tickets are \$12. call (212) 769-5606 for information about availability.



Robbers, Assassins, and Manipulators: Some Bees I Have Known on January 14



Take a closer look at the insect world on behind-the-scenes tours of the Department of Entomology

DINOSAURS ARE THE LATEST THING FOR LUNCH!

Come try the brand-new **DINER SAURUS**, a fun-loving, fast service eatery that literally glows with neon dinosaurs!

Featuring our
MEAL-O-SAURUS.....\$5.95
DINO SIPPERS.....\$2.00
DINO FRIES.....\$2.05

And our latest addition:
HOT 'N CHEESY PEPPERONI PIZZA!

Hours: 11am - 4:45pm, Mon. - Sun.
On lower level, next to the Garden Cafe.



ROTUNDA

ISSN 0194-6110

Vol 18, No 1
January 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Evelyn Robbins — Proofreader
Peter Zelaya — Fulfillment Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY.

Printed by Waldon Press, Inc. New York

341

Jumbo: The World-Famous Elephant



Jumbo's back! The darling of the big top, the biggest of Phineas T. Barnum's big deals, Jumbo was a stellar attraction more than a century ago, but his legend endures. And so does his skeleton, which will be exhibited later this month in the Roosevelt Memorial Hall on the first floor.

Baby Jumbo was captured

in Africa in 1861 and transported to the London Zoo, where he grew to an immense size, estimated at six tons. In 1882 Barnum purchased the elephant amid great fanfare and brought him to the United States, where Jumbo drew enormous crowds until his fatal accident less than three years later —

a head-on collision with a speeding freight train.

The massive skeleton was donated to the Museum and has been exhibited several times. During this exhibition the Department of Education will offer related programs for young people and adults. For information call (212) 769-5310.

Ice Fishing

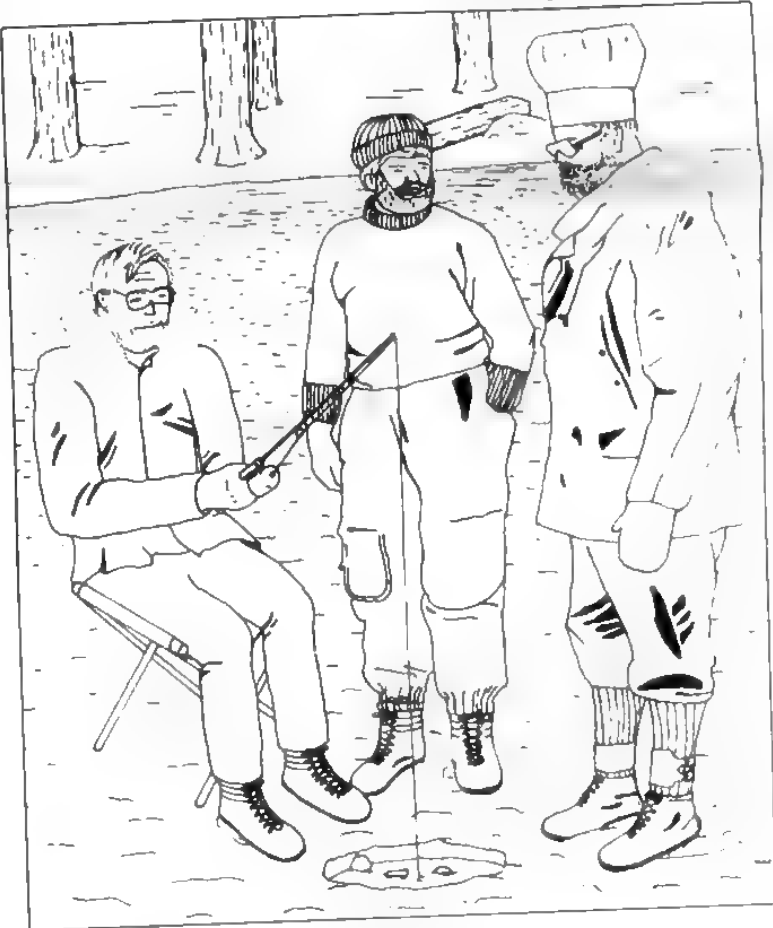
At Blue Mountain Lodge in Peekskill, New York

Saturday, February 6
9:00 a.m.-5:00 p.m.
\$60 per person,
and open only to
Participating and
Higher Members

Love to fish? Love the cold weather? Try ice fishing! Join Friends of Fishes, curators from the Department of Ichthyology, and members of the Hudson River Foundation for a spectacular day of nature walks, ice fishing, and a gourmet catered lunch — in the lodge or on the lake, the choice is yours.

Bring warm clothes, a love for the brisk outdoors, and a hearty appetite. Those who brave the ice can bring their catch back to where the less bold will be keeping warm, waiting comfortably in front of the lodge's big old-fashioned fireplace. Lunch will include fish, salads, side dishes, dessert, beer, wine, hot chocolate, and coffee.

Tickets are \$60 per person and include lunch and roundtrip bus transportation from the Museum to Blue Mountain Lodge. Register soon; there are a limited number of tickets available only through mail order. Use the coupon at right to register and call (212) 289-3605 or fax (212) 427-6659 for further information.



Ice Fishing. Saturday, February 6, 9:00 a.m.-5:00 p.m.

Number of Members' tickets at \$60: _____
Total amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the *Friends of Fishes/AMNH*, and mail with a **self-addressed, stamped envelope** to *Friends of Fishes*, Dept. of Ichthyology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

January Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to *January Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Telephone reservations are not accepted.
No refunds or exchanges.

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

Jews of Yemen

Thursday, January 7, 7:00 p.m.

Number of Members' tickets at \$7: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

Robbers, Assassins, and Manipulators: Some Bees I Have Known.

Thursday, January 14, 7:00 p.m.

Number of free Members' tickets

(no more than 2, please) _____

Number of additional Members' tickets at \$4: _____

Number of non-Members' tickets at \$7: _____

Total amount enclosed for program: _____

The Collections of the Pierpont Morgan Library

Thursday, January 28, 7:00 p.m.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

Shoestring Players.

Saturday, January 30. Please indicate a first and second choice

_____ 1:30 p.m. _____ 3:30 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

This Island Earth.

Saturday, February 6, 3:00 p.m.

Number of Members' tickets at \$4: _____

Number of additional tickets at \$7: _____

Total amount enclosed for program: _____

O'Keeffe and Stieglitz

Wednesday, February 10, 7:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

What the Bones Tell Us

Wednesday, February 17, 7:00 p.m.

Number of free Members' tickets

(no more than 2, please): _____

Number of additional tickets at \$4: _____

Number of non-Members' tickets at \$7: _____

Total amount enclosed for program: _____

The World of Animals.

Saturday, February 20 Please indicate a first and second choice

_____ 11:30 a.m. _____ 1:30 p.m.

Number of Members' tickets at \$5: _____

Number of additional tickets at \$8: _____

Total amount enclosed for program: _____

Rio Roosevelt.

Thursday, February 25, 7:00 p.m.

Number of Members' tickets at \$7: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

What the Bones Tell Us

Wednesday,
February 17
7:00 p.m.
Kaufmann Theater
Free for Members,
\$7 for non-Members



Jeffrey Schwartz

There are no right or wrong interpretations of historical science, asserts anthropologist Jeffrey Schwartz. What counts, he says, are the data and the context in which evidence is assessed. At the Members' program *What the Bones Tell Us* Schwartz will explore conflicting ideas about human origins and evolution.

Focusing on the inner workings of archeology and anthropology, Schwartz explains what can be learned from fossils and fragments of ancient cultures and civilizations. Bone fragments can be used not only to identify animal species but also to tell of their past history. Studies of bones can show the land's past capacity to sustain animal life, whether domestic or wild. Every living creature —

whether it's considered as part of a civilization, a species, or a diverse evolutionary group — has a unique history. This makes its discovery more than just a matter of unearthing a fossil or sequencing a species DNA, it's an issue of interpreting data in order to reconstruct the missing pieces of a puzzle.

A professor of physical anthropology at the University of Pittsburgh, Schwartz is also a research associate at the American Museum. Copies of his new book, *What the Bones Tell Us* (Holt and Company), will be available for purchase at the program, and Schwartz will sign copies after the lecture.

Use the January Members' programs coupon on page 3 to register for the program.

O'Keeffe and Stieglitz: An American Romance

Wednesday, February 10
7:00 p.m.
Kaufmann Theater
\$6 for Members, \$10 for non-Members

They were an extraordinary couple from the start. Alfred Stieglitz, a 52-year-old master of photography, was introduced to Georgia O'Keeffe's work before he ever met her. Although she was barely scraping by as a teacher, the 28-year-old O'Keeffe was uncowed by Stieglitz's reputation and enraged at his presumption in exhibiting her work. Evenly matched in force of character, each was the other's critic and inspiration, and their love story is legendary.

Benita Eisler explores the myths and realities of the O'Keeffe-Stieglitz relationship as she discusses her book, *O'Keeffe and Stieglitz: An American Romance* (pub-

lished in hardcover by Doubleday and in paperback by Penguin). Eisler chronicles the stormy relationship between these artistic titans and captures the flavor of their times and milieu, from the vibrant bustle of New York in the Twenties to the desert grandeur of Abiquiu, New Mexico.

Eisler has been an art editor for George Braziller Publishers and worked in the exhibitions department at Wildenstein and Co. Copies of *O'Keeffe and Stieglitz* will be available for purchase at the program, and Eisler will sign books after the talk.

Use the January Members' programs coupon on page 3 to register for the program.

The 1992 Rio Roosevelt Expedition

Thursday, February 25
7:00 p.m.
Kaufmann Theater
\$7 for Members, \$10 for non-Members



These field photos were taken during the 1914 expedition to the "River of Doubt"

Theodore Roosevelt's last adventure was a two-month odyssey down a 930-mile-long Amazon tributary that had never before been explored. This "River of Doubt" — so called because no one knew exactly where it went — has since been named for the former president, who nearly died during the 1914 expedition. Last year a team of 20 Brazilians and Americans used Roosevelt's extensive maps, photographs, and his book *Through the Brazilian Wilderness* to retrace his journey. Their historical comparison documented environmental changes in one of the world's most remote regions.

Tweed Roosevelt, Theodore Roosevelt's great-grandson, will tell Members about his experiences on the 1992 Rio Roosevelt expedition, which was only the third known navigation of the river. Nobody has traveled its length since 1926, when a second expedition verified the original explorers' findings and quieted suspicions about the earlier journey's authenticity.

Two scientists from the American Museum were among the 1914 expedition members. The survey and mapping expedition, which was sponsored by the Brazilian government, is Theodore Roosevelt's "forgotten" expedition, overshadowed by his better-known adventures in Africa and the American West. The former Rough Rider and his party endured harrowing setbacks — several of their dugout canoes were sunk or crushed by rapids and



rocks and had to be replaced on the spot. Virtually all of the explorers came down with jungle fever and infections or suffered other injuries, and three expedition members died.

The 1992 adventurers had the advantages of modern conveniences such as satellite technology, freeze-dried food, and modern tents and insect repellents. Nonetheless they faced the ongoing discomforts of sweltering heat, rain, and high humidity along with the perils posed by insects, snakes, and piranha.

They encountered thou-

sands of insects and hundreds of plant and fish samples, many of which had never been cataloged by outsiders. Tweed Roosevelt collected insects for the American Museum's Entomology Department and mollusks for Harvard's Museum of Comparative Zoology. He and the other expedition members found the region remarkably unchanged over the past 78 years and believe they experienced it much the way the former president did.

Use the January Members' programs coupon on page 3 to register for the program.

Contact: Cultural Changes, Alternative Perspectives

The following programs are presented in conjunction with the Education Department's ongoing series *Contact: Cultural Changes, Alternative Perspectives*.

No tickets are necessary, but seating is limited and available on a first-come, first-served basis. For further information about these free programs, which are made possible in part by the generosity of the family of Frederick H. Leonhardt and by gifts from the Samuel and May Rudin Foundation, call (212) 769-5315.

Lumad: Indigenous Filipino Music and Dance

**Saturday, January 9
2:00 and 4:00 p.m.
Kaufmann Theater**

Music, dance, and storytelling derived from the indigenous traditions of the Philippines will be performed by the Karadya'an Ensemble. The program features festival gong-style drumming, called *kulintang*, which has been preserved among Muslim Filipinos and is taught by masters in Mindanao.

The Karadya'an Ensemble is a folk arts group specializing in the cultural traditions and heritage of Filipinos. Their sponsor Amauan, a Filipino-American multiarts center, was founded in 1979 and has received numerous grants from the National Endowment for the Arts and the New York State Council on the Arts.

Asians in America in the Last 100 Years

**Sunday, January 10
2:00 and 4:00 p.m.
Kaufmann Theater**

Pan Asian Repertory Theater presents highlights from three plays that explore the experiences of Chinese, Japanese, and Hawaiian people in the United States before and after the turn of the century.

Gagaku and Bugaku: Music and Dance of the Japanese Court

**Sunday, January 17
2:00 and 4:00 p.m.
Kaufmann Theater**

The Jo Ha Kyu performance group presents *bugaku*, Japanese court dances of the seventh century and new works that interpret ancient dances with Western movement.

Gagaku (court music) and its accompanying dances were art forms that resulted from Japanese contact within Asia. Gagaku musicians of the Meiji era (1868-1912) studied Western music and composed new pieces in Western style with gagaku-type melodies. The program explains the variety of influences on this ancient court tradition.

Andean Music and Dances 500 Years Later

**Sunday, January 24
2:00 and 4:00 p.m.
Linder Theater**

Guillermo Guerrero presents live music, slides, and videos that reflect the European influences on Andean instruments, music, and dance.

China in 1492

**Sunday, January 31
2:00 p.m.
Kaufmann Theater**

In 1492 Columbus set out in search of Cathay (today's China), the land described by Marco Polo in the thirteenth century. Jonathan D. Spence will discuss Chinese society of the fifteenth century, focusing on its religious diversity, urban prosperity, and relationship to the sea. He'll then consider the receptions given to foreigners visiting China during this period and speculate on how Columbus might have been received there.

Spence is the George Bur-

ton Adams Professor of History at Yale University. A recipient of the MacArthur Foundation's prestigious award, he has written numerous books about China, the most recent of which is *Chinese Roundabout*. This program is cosponsored by the China Institute in America.

Leonhardt People Center 1:00-4:30 p.m.

January 2 and 3

Filipino Music Traditions: Kulintang and Rondalla. Using gong drums and stringed instruments, members of the Karadya'an Ensemble of Amauan explain and demonstrate Spanish influences on Filipino musical traditions.

After Columbus: The Filipino Experience. Linda A. Pichon, executive director of Amauan, discusses the impact of Spanish rule on the culture and history of the Philippines.

Spanish Influence in Philippine Literature. Luis Cabalquinto reads excerpts that illustrate the impact of Spanish colonization on Philippine literary development.

January 9 and 10

Tradition and Change in Korean Performance. DUYEE Chang demonstrates the influence of Western contact on traditional Korean performing arts.

The Korean Retelling of Hollywood Movies. From 1910 to 1960 Korean storytellers acted out roles from Hollywood films — including the sound effects — for Korean audiences watching the films. Walter Lew describes the storytellers' reinterpretation of films.

Early Korean Experience in the United States. Aiyoun Choi explains who the early Korean immigrants were, why they came, and their influence on other immigrants.



The Karadya'an Ensemble performs on January 9

January 16 and 17

Koto Music: The Tradition of Innovation. Mutsumi Takamizu and Noriko Liao demonstrate and perform classical koto music. Ethnomusicologist Tomie Hahn introduces the pieces and explains their Western influences.

Early Japanese Views of the West. Kenneth J. Ruoff relates the impressions of early Japanese travelers to Europe and America.

Contributions of an "Unassimilable" Race: Japanese-Americans in Early Twentieth-Century America. Vernon Takeshita discusses the experiences of Japanese-Americans at the turn of the century and the increasing contradictions of American racial segregation.

January 23 and 24

European Colonization and Indian Dance. The impact of colonization on the decline and revival of Indian dance — from the second century to the present — is the focus of a presentation by Swati Bhise.

English as an Indian Language. S. N. Sridhar and Kamal K. Sridhar offer an insightful and humorous look at how language adapts itself to new cultures.

Indians in the West. Madhulika S. Khandelwal discusses patterns of overseas migration from India.

January 30 and 31

Mei Lanfang, Master of Beauty. Kuang-Yu Fong profiles the art and life of Mei Lanfang, the great master of Peking Opera who introduced the opera to Western audiences during the early 1900s.

Three May Fourth Writers in the United States. Xie Bingxin, Wen Yiduo, and Hu Shi were among the most influential writers, scholars, and thinkers of early twentieth-century China. Charles Wu discusses their experiences in the United States and the subsequent effects on their literary creations.

Comparing Images. Artist Hua Lee discusses the differences between Chinese and European painting in the Ming and Qing dynasties and their cross cultural influences.

Members' Workshop on

Japanese Cuisine

**Sunday, February 28
11:00 a.m. and 1:30 p.m.
\$15, and open only to Participating and Higher Members
Ages 18 and up**

Japanese culinary traditions and their relations to folklore are the focus of this Members' workshop, which also looks at Japanese dining and tea-drinking etiquette and gives some tips on eating with chopsticks.

Members will sample ten ingredients typical to Japanese cuisine. Host Pat Kinney will explain what each ingredient is and how it is used in preparing many of

the foods that Americans enjoy in Japanese restaurants. Participants will sample an assortment of Japanese dishes, and they'll attempt to identify which ingredients were used in them.

Pat Kinney has worked closely with the Japanese community in Greater New York for a dozen years. She has produced a series of television interviews in Japan for Fuji/Sankei and is currently

host and producer of *West Meets East* on Vision Cable in New Jersey. Kinney has lectured for Japan-America societies and has taught Japanese cooking at the New School, Bloomingdale's, and King's Cooking Studios.

The 90-minute presentation will take place in the Edith C. Blum Lecture Room. Use the coupon at right to register, and please note that tickets are available only by mail.

Members' Workshop on Japanese Cuisine. Sunday, February 28 Please indicate a first and second choice

___ 11:00 a.m. ___ 1:30 p.m.

Number of Members' tickets at \$15
(no more than 2, please)
Total amount enclosed for program

Name: _____

Address _____

City: _____

State _____ Zip _____

Daytime telephone: _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Cuisine, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

The Department of Education Presents

Spring 1993 Lecture Series

The Polar Explorers: Four Giants of the Arctic and Antarctic

Four Thursday evenings, starting March 18
7:00-8:30 p.m.

\$31.50 for Members, \$35 for non-Members

The North and South Polar regions have been a source of fascination since Aristotle first theorized that an unknown southern landmass balanced the weight of the northern continents. Author Kenneth A. Chambers, lecturer in zoology and a scholar of the history of polar exploration, will trace four of the most exciting expeditions in polar history.

Mar 18 *A Gamble for the Pole* Fridtjof Nansen and his search for the North Pole

Mar 25 *Endurance* Sir Ernest Shackleton's epic voyage to the Antarctic

Apr 1 *Roald Amundsen Takes the South Pole* A first glimpse of that "terrible place"

Apr 8 *Home of the Blizzard* Sir Douglas Mawson's lone journey of survival



The Polar Explorers (the ship Terra Nova on the British Antarctic Expedition of 1910-13)

Gems and Crystals from the American Museum

Four Thursday evenings, starting Feb. 25
7:00-8:30 p.m.

\$31.50 for Members, \$35 for non-Members

This four session series uses Harold and Erica Van Pelt's magnificent photos of the American Museum's gems and crystals, including the fabulous Tiffany Morgan gem collection. Participants will gain a deeper appreciation of the rich history and diversity of one of the world's finest gem collections.

Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, will present the series, which features an optional tour of the J.P. Morgan Hall of Gems (see below for details of the tour).

Feb 25 *Diamonds* Properties, types and occurrences, history, legends and lore

Mar 4 *Emeralds, Rubies, and Sapphires* Properties, types and occurrences, history, legends and lore

Mar 11 *Semiprecious Gems* Beryls, topaz, tourmaline, zircon, opals, crystalline quartz, and other rare and unusual gems

Mar 18 *Ornamental and Organic Gems* Jades, turquoise, lapis, pearl, coral, and amber.



Culture on Film (scene from *Chang: A Drama of the Wilderness*)

Tour of the J.P. Morgan Memorial Hall of Gems

Friday evening, Feb. 26
7:00-8:30 p.m.

\$15 (no discount for Members)

Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, will lead a tour of the Hall of Minerals and Gems. Peters will discuss the design philosophy behind the hall, which was opened in 1976, and point out the special Fabergé menagerie, the Fabergé school of carving, and new acquisitions. Asternism — a starlike figure produced by reflected light, which can be seen in the Star of India and the De Long Ruby — will be discussed, along with the earth's pockets of gem crystals and the history and acquisition of the giant slab of nephrite jade.

Culture on Film

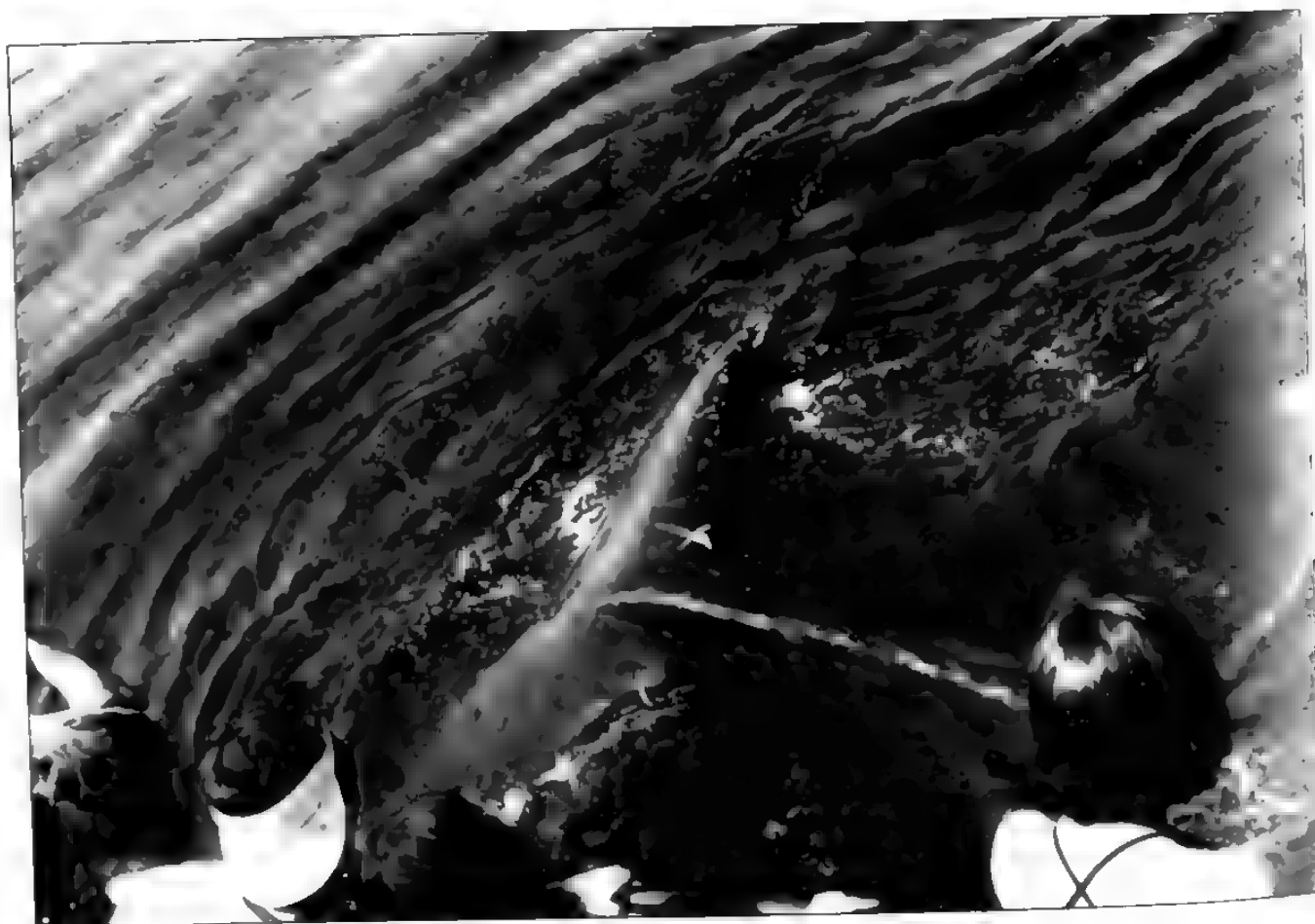
Three Tuesday evenings, starting Feb. 23
7:00-8:30 p.m.

\$27 for Members, \$30 for non-Members

This series will explore some of the ways in which filmmakers have represented other cultures. Elaine Charnov, a programmer of the Margaret Mead Film and Video Festival, hosts the series.

Feb 23 *Chang: A Drama of the Wilderness* This 1927 classic, directed by Menan C. Cooper and Ernest B. Schoedsack of *King Kong* fame, was shot in Thailand. The film will be followed by a discussion of its "man against nature" theme.

Mar 2 *Films of Al Maysles* This evening will



Weekend Whale Watch off Cape Cod



Animal Drawing

look at the work of one of the masters of the American documentary tradition, Al Maysles. Excerpts from *Grey Gardens*, the haunting story of a mother-daughter relationship that was filmed in a decaying East Hampton mansion.

Mar. 9: *Cross-Cultural Satire*. Two 30-minute films reverse the anthropological looking glass. In *Babakiuria* Australian Aborigines examine the tribe of middle-class Euro-Australians in their country, and in *Harold of Orange* Native Americans take a comic look at the ways in which others have represented them.

Wildflowers of the Northeast

Five Monday afternoons, starting Feb. 22
2:30-4:00 p.m.

or
Five Thursday evenings, starting Feb. 25
7:00-8:30 p.m.

\$36 for Members, \$40 for non-Members

Thousands of species of wildflowers are native to the northeastern United States. Some are common, others are rare, and all are part of the web of life. A variety of wildflowers of forest, meadow, pine barren, and wetland — including carnivorous bog plants, Arctic creepers, and ornate orchids — will be discussed by William Schiller, lecturer in botany for the Department of Education

1. *Anatomy of a Wildflower*. Basic structure, family and environment

2. *Mountaintop and Boreal Wildflowers*. Above the timberline and in the evergreen woodland below

3. *Wildflowers of Moist Woodlands*. Spring and fall flowers

4. *Wildflowers of Dry Environments*. Pine barrens and seashores

5. *Wildflowers of the Wetlands*. Bogs, marshes, and swamps

Spring 1993 Field Trips and Workshops

For field trip costs, itineraries, and applications call (212) 769-5310

Weekend for Bird Enthusiasts

Saturday and Sunday, May 1 and 2
Limited to 36 adults

Participants on this two-day trip take a bus to wooded areas near New York City and to the Pine Barrens of New Jersey, where they visit a lake and bog area. The group is accommodated overnight near Toms River. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen

This trip is led by Jay Pitocchelli, associate professor of biology at Kutztown University

Weekend Whale Watch off Cape Cod

Friday, Saturday, and Sunday, May 21, 22, and 23

Limited to 45 adults

Spend a weekend whale watching off the rich feeding grounds of Stellwagen Bank, near Cape Cod, where several species of whales are commonly seen at close range. Our search for these magnificent creatures involves three 4-hour private charter cruises from Provincetown. In addition to the marine biologists aboard the boat, two Museum staff members will accompany the group. Talbert Spence, environmentalist and chairman of the Education Department, and naturalist Stephen C. Quinn, who will assist in identifying the many species of coastal birds.

Other features of the weekend include optional guided nature walks along the dune and marsh areas of the Cape Cod National Seashore, an exploration of historic Provincetown, an evening slide talk on marine mammals, and a stop at the reconstructed whaling port of Mystic, Connecticut. Cost includes transportation, two nights' accommodations, meals, and lectures.

Animal Drawing

Eight Tuesday evenings, starting March 9
7:00-9:00 p.m.

\$105 (no discount for Members)

Materials not included

Limited to 25 people

Join a Museum artist to sketch subjects such as gazelles on the African plains and timber wolves in the snowbound North. After the Museum has closed to the public, students gather to draw animals from the famed habitat groups as well as individual mounted specimens. Stephen C. Quinn, assistant manager in the Exhibition Department, discusses drawing technique, animal anatomy, the role of the artist at the Museum, field sketches, and how exhibits are made. Individual guidance is given to each participant, whether beginner or experienced artist.

The following exhibition halls serve as studios: the Akeley Hall of African Mammals, the halls of North American Mammals and Birds, and Ocean Life.

Walking Tour

Spring Flowers and Trees in Central Park
Saturday, May 1, and Wednesday, May 12
9:00-11:00 a.m.

Limited to 25 people

\$15 per walk (no discount for Members)

A two-hour morning walk in Central Park observes botanical signs of spring. Participants will learn about plant identification and ecology from William Schiller, lecturer in botany for the Education Department.

Lecture Series

I enclose a stamped, self-addressed envelope together with a check (or money order) payable to the American Museum of Natural History for \$_____.

Advance registration is requested but registration will be accepted on the opening night if the course is not filled. No single lecture tickets are sold. There are no refunds. Children are not admitted to lectures, workshops, or field trips. For further information call (212) 769-5310.

Please print

Course _____ Day _____ Hour _____

Course _____ Day _____ Hour _____

Name _____

Address _____

City _____ State _____ Zip _____

Daytime telephone _____

Please make check payable to the American Museum of Natural History and mail with a **stamped, self-addressed envelope to: Lecture Series, Education Department, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192**

A Great Legacy The Collections of the Pierpont Morgan Library

Thursday, January 28
7:00 p.m.

Kaufmann Theater

\$5 for Members, \$10 for non-Members

A wealth of rare books, manuscripts, and drawings is housed in the Pierpont Morgan Library. This remarkable collection — which encompasses the history, art, and literature of Europe and the United States from the Middle Ages to the twentieth century — is the focus of the Members' program *A Great Legacy: The Collections of the Pierpont Morgan Library*.

Charles E. Pierce, Jr., the library's director, will discuss the wide-ranging collections, which consist of not only the library's holdings but also other collections that were dispersed to other institutions such as the Metropolitan Museum and our own American Museum. Pierce is the fourth individual to serve as director in the library's seven decades.

The Morgan Library originated with the medieval and Renaissance manuscripts, rare books and fine bindings, and master drawings collected by J. Pierpont Morgan (1837-1913). Beginning in

1890 the magnate assembled a collection that rivaled the great libraries of Europe: within a decade, his holdings required a building of their own. The original library building, completed in 1906, was designed by Charles F. McKim as a Renaissance-style palazzo of formal elegance and understated grandeur.

In 1924 J. P. Morgan, Jr., transformed the library into a public institution as a memorial to his father's "love of rare books and manuscripts and his belief in the educational value of the collections" he had gathered. Today the library serves as both a museum and a center for scholarly research. The collections have grown many times over, but they maintain their focus on the written word and the history of books.

See below for details of the Members' guided tours of the Morgan Library. Use the coupon on page 3 to register for the program.



Plutarch's Lives, printed in Venice in 1478

Members' Tours of

The Pierpont Morgan Library

Thursday, February 18
10:30 a.m. and 1:00 p.m.

\$10, and open only to Participating and Higher Members
Ages 18 and up

Members are invited to visit a midtown palace of marble floors, antique wooden ceilings, and stained-glass windows. They'll see spectacular items from artistic, historical, and literary collections that span four millennia and a score of civilizations.

Originally the private library of financier J. Pierpont Morgan, the Pierpont Morgan Library has grown into a complex of buildings of differing styles and periods that covers half a city block. Its treasury of paintings, sculptures, and objets d'art ranges from inscribed tablets of Mesopotamia to the Gutenberg Bible, from prints by Rembrandt to Mozart's handwritten score of the Haffner Symphony, and from a first printing of the Declaration of Independence to a summary of the General Theory of Relativity in Einstein's own hand.

The tours will offer an overview of the institution's history and architecture, introducing the life and achievements of Pierpont Morgan, his activities as a collector, and the establishment of the library. The building's period



The library's East Room

rooms will be viewed along with some items from the permanent collection.

(Charles E. Pierce, Jr., the library's director, will discuss the institution's history and holdings at a Members' program; see the other feature on this page for details.)

The tours will also view the library's current exhibition, *The Bernard H. Breslauer Collection of Manuscript Illuminations*. This exhibition offers a rare opportunity to see works from the finest

private collection of illuminated manuscript leaves in America. It features exquisitely wrought miniatures from the Romanesque period through the Renaissance and beyond and comprises more than 100 examples of Flemish, French, English, Spanish and German manuscript paintings.

The tours will last about an hour. Use the coupon below to register, and please note that tickets are available only by mail.

Members' Tours of the Pierpont Morgan Library.

Thursday, February 18. Please indicate a first and second choice

___ 10:30 a.m. ___ 1:00 p.m.

Number of Members' tickets at \$10
(no more than 2, please): ___

Total amount enclosed for program: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Morgan Library Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

**The Shoestring Players
Present**

Love, Magic, and Brussels Sprouts

**Saturday, January 30
1:30 and 3:30 p.m.
Kaufmann Theater
\$6 for Members,
\$10 for non-Members
Ages 5-12**

The Shoestring Players return to the Museum this month with an all-new program, *Love, Magic, and Brussels Sprouts*. Young audiences will be captivated by these original adaptations of folktales from around the

world.

The players will perform a witty and charming variety of lesser-known stories that are especially chosen for their ability to stimulate a child's thought and imagination. The Swedish folktale "Lars, My Lad!" stars a clever young man, a vain princess, an invisible helper, and an angry king. "Into the Jungle" is a comic tale from Java in which a princess chases a prince into the jungle — and barbarians chase the princess and the gods chase the barbarians. One of the oldest of Celtic stories, "The Black Horse," is a dramatic tale from ancient Ireland. A mysterious black horse carries its rider through fire, ice, and the ocean so that the forces of courage and love will triumph over evil. The show concludes with "Baba Yaga," a comedy about a foolish witch in old Russia.

The Shoestring Players have been performing their brand of innovative children's theater since 1980. Their philosophy is to create good theater on a shoestring budget with presentation techniques that are inventive and amusing. The magic of a Shoestring performance lies in its appeal to children's imaginations — with minimal changes of costume and without scenery or props, the actors transform themselves into mirrors, windmills, bridges, and a multitude of other devices.

The program lasts about an hour, with a brief intermission during which the audience can participate in a creative-dramatics adventure. Adults will enjoy the show at least as much as the children (and maybe more).

Use the January Members' programs coupon on page 3 to register



The Shoestring Players

The World of Animals

**Saturday, February 20
11:30 a.m. and 1:30 p.m.
Kaufmann Theater
\$5 for Members, \$8 for non-Members
Ages 5 and up**

Join naturalist Bill Robinson for a real live look at wildlife ecology. His program *The World of Animals*, which shows how wild creatures adapt to their environments, features live animals on stage and a discussion of their roles in nature.

Guest stars include a legless lizard, an animal that has evolved to the point where it resembles a snake save for its eyelids and tiny ear openings. Anyone who's seen *Raiders of the Lost Ark* has seen scores of these bizarre creatures — the movie's seething "snake" pit was actually filled with legless lizards. Robinson once attempted to rescue a "snake" from the path of an oncoming car only to find that the animal snapped in two in his hands; the legless

lizard's tail, which is half of its length, breaks off in a struggle. Sometimes the predator is distracted by the wiggling tail and lets the upper body crawl off to safety (and to regenerate another tail).

A natural-born escape artist will join Robinson on stage. The armadillo can pull a get-away by using its powerful front legs to dig a burrow. Its dens are masterpieces of engineering that measure up to six feet long with pits four feet deep. Robinson will explain why there may be as many as 11 armadillos in a litter but the males have no sisters and the females no brothers.

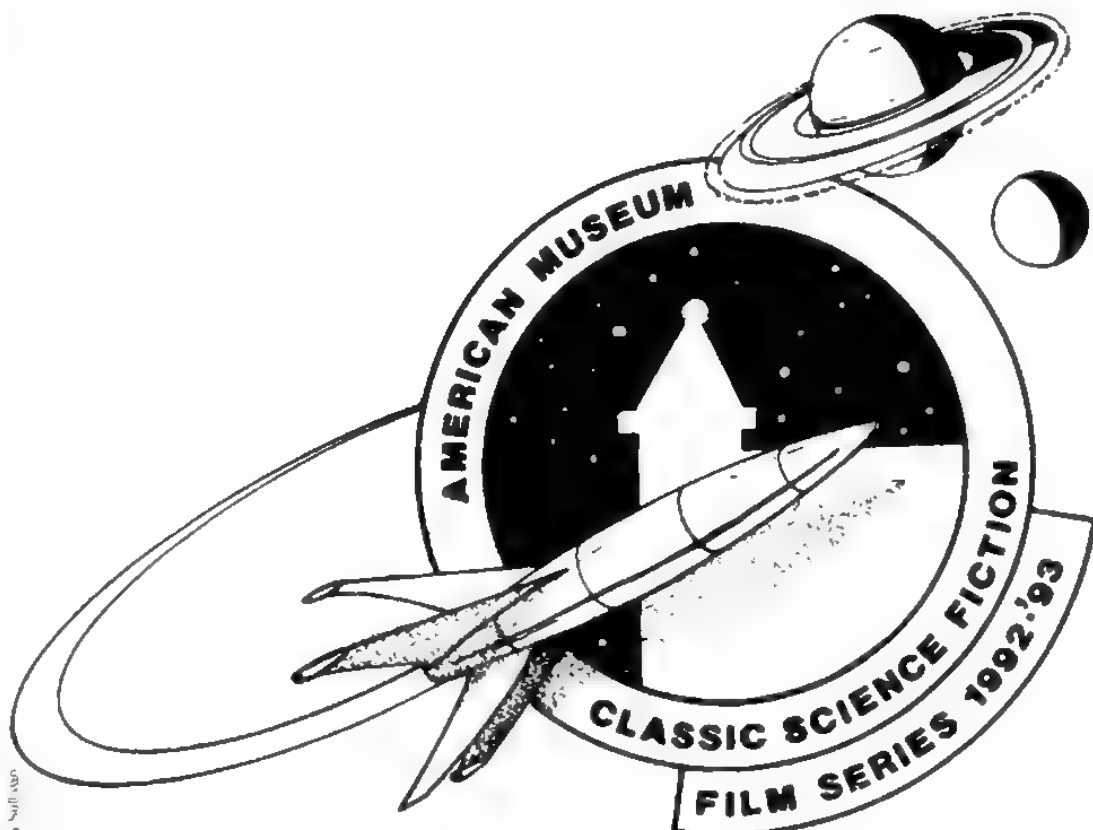
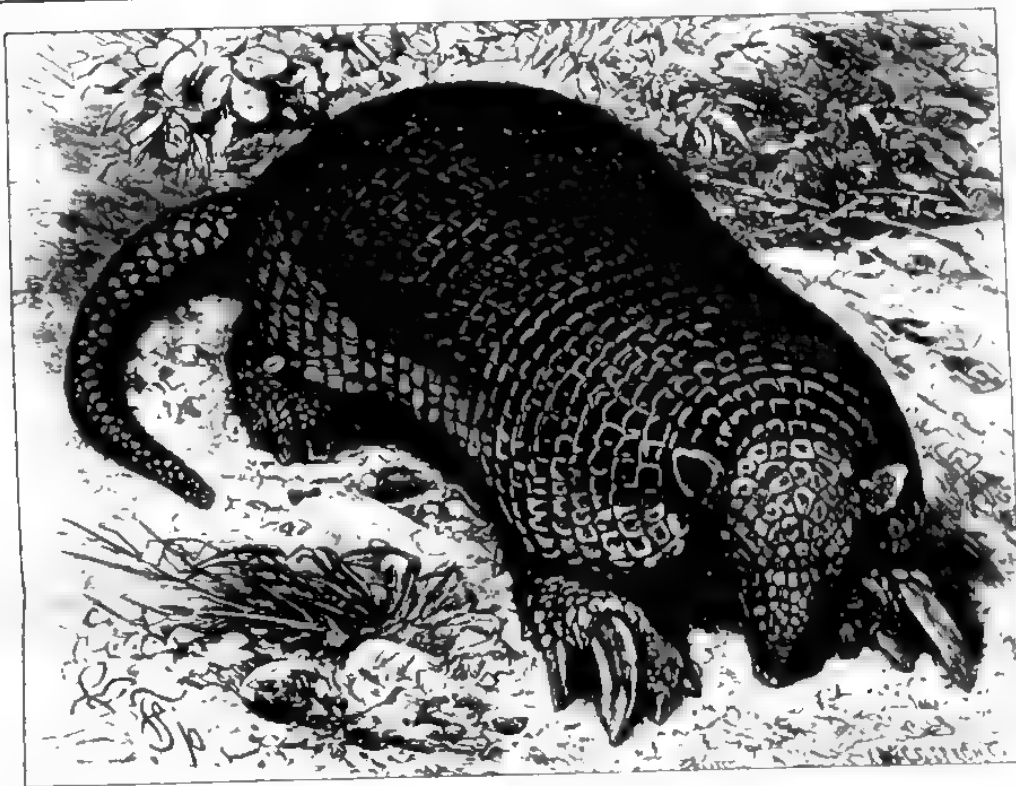
Among the other guests are a barking lizard, which will show its unusual method of bluffing predators, an alligator snapping turtle, a big

king cobra, which will rear up and spread its hood, and a 16-foot-long python that daring volunteers from the audience can come on stage to help hoist. And a pair of feathered friends — an owl and a red-tailed hawk — will

demonstrate their flight patterns by soaring over the audience's heads.

Robinson, who presents his dramatic wildlife programs to thousands of schoolchildren each year, has appeared at the Museum for the past 13

years. Please note that all attendees, parents and children alike, must have tickets, and strollers and babes in arms will not be admitted to the theater. Use the January Members' programs coupon on page 3 to register.



Classic Science-Fiction Film Series

This Island Earth

**Saturday, February 6
3:00 p.m.
Kaufmann Theater
\$4 for Members, \$7 for non-Members**

The Members' Classic Science-Fiction Film Series takes a look at some of the best sci-fi movies ever made. Brian Sullivan, the Hayden Planetarium's production designer, will introduce each movie in the series with a slide show focusing on the film's special effects and other features that mark it as a filmmaking milestone.

Next month's feature is *This Island Earth*, a 1955 production directed by Joseph M. Newman, starring Jeff Mor-

row, Faith Donnergue, and Rex Reason. It is about Earthlings who find themselves trapped on a planet that's being bombarded by meteors directed at it by an enemy planet.

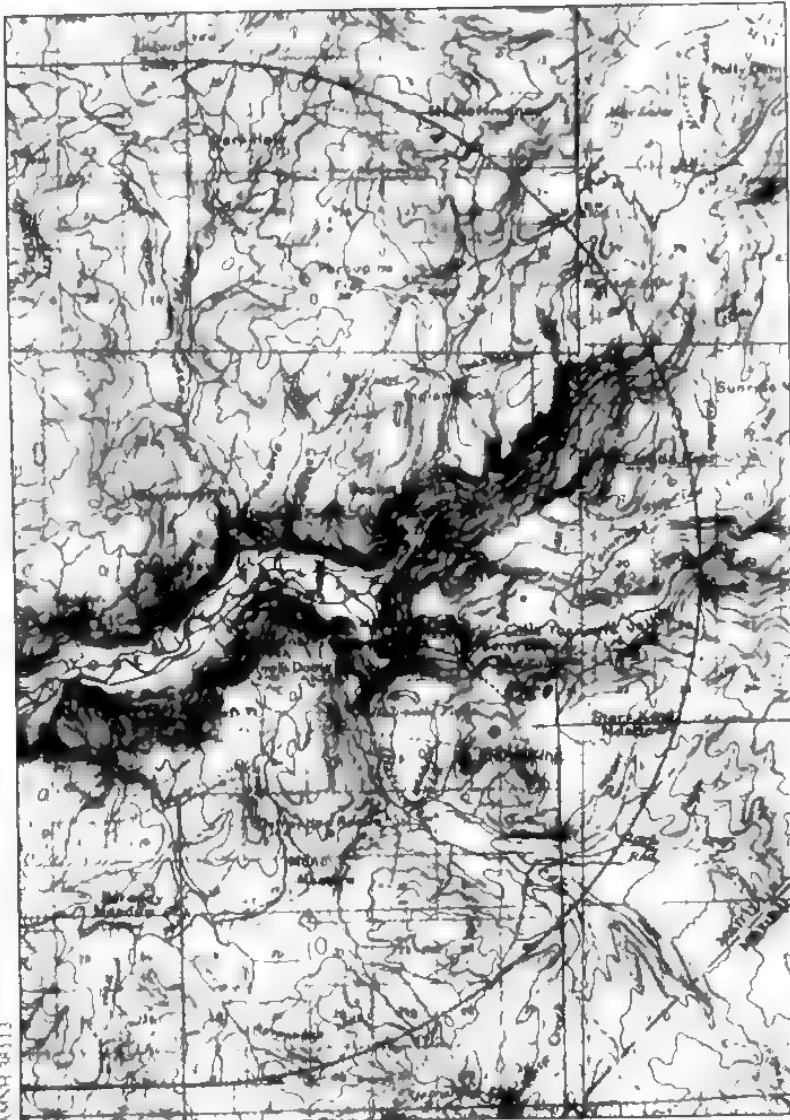
The film is 87 minutes long and will be preceded by a 30-minute slide show. Upcoming films in the series are *Silent Running*, *Journey to the Far Side of the Sun*, and *Alien*. Use the January Members' programs coupon on page 3 to register.

Members' Workshops on

Reading and Interpreting Topographic Maps and Making Topographic Models

Tuesday, February 2, and Tuesday, February 9
5:30-7:30 p.m.

\$40 per person, and open only to Participating and Higher Members



Sidney Horenstein, the Museum's coordinator of environmental public programs, will present a two-part workshop that shows participants how to interpret topographic maps and make their own topographic models.

The first session will focus on the basics of map interpretation: topics include longitude, latitude, scale, and distance. Members will begin to learn how to read and interpret contour lines and how to make profiles of terrain on maps. At the second session the class will conclude its instruction on interpreting contours and learn the elements of constructing topographic models based on contour lines.

Participants should bring a sharp pair of scissors to class — all other materials are covered by the \$40 fee. Use the coupon at right to register, and please note that tickets are available only by mail.

Members' Workshops on Reading and Interpreting Topographic Maps and Making Topographic Models. Tuesday, February 2, and Tuesday, February 9, 5:30-7:30 p.m.

Number of Members' tickets at \$40
(no more than 2, please): _____

Total amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Top Maps*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Origami for Kids

Wednesdays, February 3, 10, and 17
4:00-5:30 p.m.
\$40, and open only to
Participating and Higher Members
Ages 8 and up



Michael Shall

Young Members can take their first steps in origami, the incredible art of paperfolding, at a series of three progressive classes.

Participants will start with the most basic folds and learn more complex models each week. They'll make boxes, birds, animals, flowers, fruit, and geometric shapes from a variety of papers from around the world. Neither scissors nor glue will be needed, and the \$40 fee includes all materials. Origami vocabulary and symbols will be introduced, and each student will receive illustrated instructions for the models they've learned so that they can reproduce their exciting new creations at home.

The sessions will be led by professional paperfolder Michael Shall, who is a master teacher.

Use the coupon at right to register, and please note that tickets are available only by mail.

Origami for Kids. Wednesdays, February 3, 10, and 17, 4:00-5:30 p.m.

Number of Members' tickets at \$40
(no more than 2, please): _____

Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Children's Workshop*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

New and Improved

A variety of renovations are under way at the Museum. We are giving a new look to our dinosaurs and creating an up-to-date exhibition hall illustrating human biology and evolution.

While these renovations are taking place access to some exhibition halls will be re-

stricted. The halls of Earth History, Late and Early Mammals, and Late and Early Dinosaurs are closed until further notice.

Previews of the renovated fossil halls on the fourth floor are on display in Gallery 77. *Work in Progress: From Drawingboard to Dinosaurs*

features dinosaur bones and other specimens, along with models, plans, and drawings of the new halls now under construction. Dinosaur devotees should be sure to stop by the Roosevelt Memorial Hall on the second floor for a look at the *Barosaurus*, the world's tallest freestanding di-

nosaur exhibit.

Don't miss *Global Warming: Understanding the Forecast*, which features hands-on exhibits, multimedia displays, and interactive computer programs focused on one of the most important environmental issues of our time. The exhibition poses

important questions about climate change, shows how scientists are working to answer these questions, and suggests what individuals can do to reduce the risk of global warming. This month is the last chance to see *Global Warming* in Gallery 3; it is on display through January 19.

Museum Notes

Hours

Exhibition Halls	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-8:45 p.m.
The Museum Shop	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-7:45 p.m.
The Junior Shop	
Mon.-Fri.	10:00 a.m.-4:45 p.m.
Sat. & Sun.	10:00 a.m.-5:45 p.m.
The Museum Library	
Tues.-Fri.	11:00 a.m.-4:00 p.m.
Diner Saurus Fast Service Eatery	
Daily	11:00 a.m.-4:45 p.m.
Garden Cafe	
Reservations: (212) 874-3436	
Lunch: Mon.-Fri.	11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.	5:30-7:30 p.m.
Brunch: Sat. & Sun.	11:00 a.m.-4:00 p.m.
Whale's Lair	
Fri.	3:00-8:00 p.m.
Sat.	Noon-8:00 p.m.
Sun. & most holidays	Noon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)	
Sat. & Sun.	11:00 a.m.-4:00 p.m.
The Discovery Room	
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10. Children must be accompanied by an adult. Closed on holidays and weekdays.	
Sat. & Sun.	Noon-4:30 p.m.
The Natural Science Center	
For children of all ages and their families. Closed on Mondays and holidays	
Tues.-Fri.	2:00-4:30 p.m.
Sat. & Sun.	1:00-4:30 p.m.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), and the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax

Tropical Rain Forest tells the story of the 400-million-year evolution of tropical rain forests and the efforts of scientists and researchers to understand these regions before they disappear. The film, which was shot in Queensland, Australia, Malaysia, and Costa Rica, is narrated by choreographer Geoffrey Holder and focuses on the rain forests' biological diversity. Daily showtimes are 10:30 and 11:30 a.m., 12:30, 1:30, 2:30, 3:30, and 4:30 p.m.

On Friday and Saturday evenings, Tropical Rain Forest is shown with The Magic Egg, a computer-animated visual journey that showcases the technology of IMAX filmmaking. Through the magic of computer graphics, viewers enjoy a high-speed flight through a blueprint city, take a digital roller coaster ride, and fly by Saturn. Showtimes are at 6:00 and 7:30 on Friday and Saturday evenings.

Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members): Adults \$4 single feature, \$5.50 double feature. Children: \$2 single feature, \$3 double feature.

Birthday Parties

Theme parties for young Members 5-10 years old are two hours long and held at 3:30 p.m. on Wednesdays, at 4:00 p.m. on Fridays, and at



11:00 a.m. or 2:30 p.m. on weekends. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child. (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769-5606 for further information.

Parking

The parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first-come, first-served basis. Call the Membership Office at (212) 769-5606 for information about alternative parking.

Sun.-Thurs. 9:30 a.m.-9:30 p.m.
Fri. & Sat. 9:30 a.m.-midnight
Cars \$12; Buses \$11

Museum Tours

Free Museum Highlights Tours are available to individuals and families. Tours are conducted daily at 10:15 and 11:15 a.m., 1:15, 2:15, and 3:15 p.m. Free Spotlight Tours are also available to individuals and families. Current Spotlight Tour topics include dinosaurs, global warming, gems and minerals, and many others. Call the Volunteer Office for times and topics.

Group Tours are available for a fee. All Group Tours must be scheduled through the Volunteer Office. For details, call (212) 769-5566.

Happenings at the Hayden

Sky Show

Bold Visions . . . Distant Shores (beginning Jan. 6)

Long before European explorers reached the Americas these continents saw the rise of amazing civilizations — from North American deserts to Mexican and Andean jungles. *Bold Visions . . . Distant Shores* explores the sophisticated skylore of the Maya, Aztecs, Inca, and Anasazi and the ways in which this knowledge influenced their daily lives.

Showtimes:
Mon.-Fri. 1:30 and 3:30 p.m.
Sat. 11:00 a.m. (except for Jan. 2 and Feb. 6), 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Sun. 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Admission to the Sky Show for Participating and Higher Members is \$4 for adults and \$2 for children. For non-Members' prices and additional information, call (212) 769-5900.

Lectures

On Wednesday, February 10, at 7:30 p.m., Margaret Geller of the Harvard Smithsonian Astrophysical Observatory will present an illustrated talk, "Mapping a Large Scale Structure of the Universe." She'll reveal surprising patterns in the universe that emerge through supercomputer animation as she presents three-dimensional representations of galaxies within a few hundred billion light years of the Milky Way.

This lecture will take place in the Sky Theater. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. Use the coupon at right to register, and for additional information call (212) 769-5900.

African Sky Lore

On Tuesday, February 16, at 7:00 p.m., Cheryl Byron and Something Positive will present African storytelling under the Planetarium's starry dome. They'll tell of African sky lore with assistance by dancers, musicians, and Planetarium effects.

This program is suitable for adults and children. Tickets are \$8 for Participating and Higher Mem-

bers and \$10 for non-Members. Use the coupon at right to register, and for additional information call (212) 769-5900.

Courses for Stargazers

The Planetarium offers a variety of courses on basic and advanced astronomy along with classes on meteorology and geology, aviation, and navigation. For further information about the courses call (212) 769-5900.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Jan. 2, at 10:30 a.m., and Sat., Feb. 6, at 10:30 and 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., Jan. 2, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900.

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented

on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, call (212) 769-5900.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5900.

Lecture: "Mapping a Large Scale Structure of the Universe." Wednesday, February 10, 7:30 p.m.

Number of Members' tickets at \$6: ____
Number of non-Members' tickets at \$8: ____
Total amount enclosed for program: ____

African Storytelling. Tuesday, February 16, 7:00 p.m.

Number of Members' tickets at \$8: ____
Number of non-Members' tickets at \$10: ____
Total amount enclosed for program: ____

Name _____

Address _____

City: _____ State: _____ Zip _____

Daytime telephone: _____

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to Lecture, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Sun

January 1993

American
Museum of
Natural History

3 1:00-4:30 p.m. Leonhardt People Center events. See page 5.
2:00 p.m. NY Shell Club. Room 319. Free.

Last chance to see *The Star of Christmas* at the Hayden Planetarium.

Mon

Tue

Wed

Thu

Fri

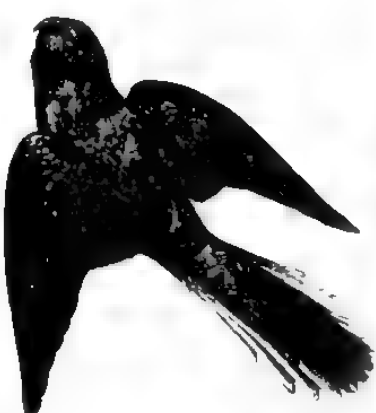
Sat

Mailing List

From time to time we make our Member list available to carefully screened companies whose products or services may be of interest to you. If you don't want to receive any promotional mail other than the Museum's, please send your mailing label from *Natural History* with a request to delete your name to:

Membership Office/No Promotional Mail
American Museum of Natural History
79th Street at Central Park West
New York, NY 10024-5192

Please be assured we will take prompt action.



1 Happy New Year! The Museum is open

2 11:00 a.m. NY Map Society Room 319. Free

1:00-4:30 p.m. Filipino Music Traditions: Kulintang and Rondalla; *After Columbus*: The Filipino Experience; Spanish Influence in Philippine Literature. Leonhardt People Center. Free. Page 5.

6 7:45 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

7 7:00 p.m. *Jews of Yemen: A Vanishing Culture*. Members' evening program. Main Auditorium. \$7 for Members, \$10 for non-Members. Page 1

8 3:00, 4:30, and 6:00 p.m. *The Geology of Southern Asia*. Members' Museum tour. \$16, and open only to Participating and Higher Members. Tickets required. Page 2.

9 1:00-4:30 p.m. *Tradition and Change in Korean Performance*: The Korean Retelling of Hollywood Movies; *Early Korean Experience in the United States*. Leonhardt People Center. Free. Page 5.

2:00 and 4:00 p.m. *Lumad*: Indigenous Filipino Music and Dance. Kaufmann Theater. Free. Page 5.

11 Last chance to see the Origami Holiday Tree.

12 7:30 p.m. Linnaean Society. Linder Theater. Free.

13

14 7:00 p.m. *Robbers, Assassins, and Manipulators: Some Bees I Have Known*. Members' evening program. Kaufmann Theater. Free for Members, \$7 for non-Members. Page 2.

15

16 1:00-4:30 p.m. *Koto Music: The Tradition of Innovation*; *Early Japanese Views of the West*; *Contributions of an "Unassimilable" Race*: Japanese-Americans in Early Twentieth-Century America. Leonhardt People Center. Free. Page 5

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 100 private foundations, 520,000 members, and numerous individual contributors



10 10:30 a.m. and 1:00 p.m. *Calendar Making*. Members' adult-child workshop. \$26 per couple, and open only to Participating and Higher Members. Tickets required. Page 2.
1:00-4:30 p.m. Leonhardt People Center events. See page 5.
2:00 and 4:00 p.m. *Asians in America in the Last 100 Years*. Kaufmann Theater. Free. Page 5.

17 10:30 a.m. NY Turtle and Tortoise Society. Room 319. Free.

18 Martin Luther King, Jr., Day. The Museum is open.

1:00-4:30 p.m. Leonhardt People Center events. Free. Page 5.

2:00 p.m. NY Paleontological Society. Room 319. Free.

2:00 and 4:00 p.m. *Music and Dance of the Japanese Court*. Kaufmann Theater. Free. Page 5.

24 1:00-4:30 p.m. Leonhardt People Center events. Free. Page 5.

2:00 and 4:00 p.m. *Andean Music and Dances 500 Years Later*. Linder Theater. Free. Page 5.

31 1:00-4:30 p.m. Leonhardt People Center events. Free. Page 5.

2:00 p.m. *China in 1492*. Kaufmann Theater. Free. Page 5.

20

21 Members' Behind-the-Scenes Tours of the Department of Entomology. \$12, and open only to Participating and Higher Members. Tickets required. Page 2

22 Jumbo exhibit opens. Page 3.

23 Members' Behind-the-Scenes Tours of the Department of Entomology. \$12, and open only to Participating and Higher Members. Tickets required. Page 2.

1:00-4:30 p.m. *European Colonization and Indian Dance*; *English as an Indian Language*; *Indians in the West*. Leonhardt People Center. Free. Page 5.

30 1:00-4:30 p.m. *Mei Lan-fang, Master of Beauty*; *Three May Fourth Writers in the US*; *Comparing Images*. Leonhardt People Center. Free. Page 5.

1:30 and 3:30 p.m. *Louie, Magic, and Brussels Sprouts* Members' family program for the Shoestring Players. Kaufmann Theater. \$6 for Members, \$10 for non-Members. Page 9.

25

26 5:30-7:30 p.m. *Identifying Rocks and Their Minerals*. Members' workshop. \$40, and open only to Participating and Higher Members. Tickets required. Page 2. **SOLD OUT**

27 6:00-8:00 p.m. *Our Own Backyard* The Hudson River and NY Harbor. Part 1 of 5 sessions on Hudson River ecology, geology, and hydrology. Main Auditorium. For further information call Friends of Fishes at (212) 289-3605 or fax (212) 427-6659

28 7:00 p.m. *A Great Legacy: The Collections of the Pierpont Morgan Library*. Members' evening program. Kaufmann Theater. \$5 for Members, \$10 for non-Members. Page 8

29

ROTUNDA

Vol 18, No 2 February 1993

For Participating and Higher Members of the American Museum of Natural History



Cynthia Moss, who has studied elephants and worked for their conservation for the past 25 years, will tell Members of her research at Amboseli National Park in Kenya.



Echo of the Elephants

Thursday, March 4
7:30 p.m.
Main Auditorium
\$8 for Members, \$12 for non-Members

Meet Echo, the elephant matriarch, and the closely knit family that she holds together within Kenya's Amboseli National Park. The history of Echo's 14-member family — their births, deaths, tragedies, and joys — is the focus of a Members' program by conservationist Cynthia Moss.

Moss, who spent 18 eventful months following Echo and her kin, will discuss day-to-day life among the elephants. She'll describe their family units, which usually consist of adult females and their offspring, and the intriguing methods by which the less-social males find mates.

Born and educated in the United States, Moss moved to Africa in 1968

and has spent the past 25 years there studying elephants and working for their conservation. Her involvement with elephants began at Lake Manyara National Park in Tanzania, where she worked with Iain Douglas-Hamilton on his pioneering elephant study.

In 1972 she began the longest continuing study of these mammals, the Amboseli Elephant Research Project in Kenya, which she continues to direct. Moss is also a senior associate with the Washington, DC-based African Wildlife Foundation, which supports her research. As part of her conservation efforts, she has conducted surveys of other elephant populations in Kenya, Tanzania,

Zaire, and Botswana. Over the years she has come to know and recognize more than 700 different individuals, which has enabled her to chronicle their relationships, social organization, behavior, and life cycles.

Moss's appearance at the Museum next month is presented in conjunction with the publication of her third book, *Echo of the Elephants* (Morrow). Use the coupon on page 3 to register for the program.

Members may wish to complement their evening with the elephants by arriving early to take a look at the Museum's current *Jumbo* exhibit on the first floor of the Roosevelt Memorial Hall. Come into the Museum

through the driveway entrance at 79th Street and Central Park West where the exhibit about P.T. Barnum's world famous circus elephant is on display. Volunteer Highlights Tour guides will be available to discuss the exhibit.

In the Hall of Northwest Coast Indians (just outside the Auditorium) there will be a special display of specimens from the Museum's collections for Members to observe. Jean Augustin, senior technician in the Department of Mammalogy, will be on hand to discuss fascinating aspects of elephant physiology, and he'll illustrate his remarks with specimens of teeth, tusks, and hide.

**Members' Workshops on
Reading and
Interpreting
Topographic Maps
and Making
Topographic
Models**

**Tuesday, February 2, and
Tuesday, February 9
5:30-7:30 p.m.**

Sidney Horenstein, the Museum's coordinator of environmental public programs, will present a two-part workshop that shows participants how to interpret topographic maps and make their own topographic models.

Tickets are \$40 and available only to Participating and Higher Members. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Origami for Kids

**Wednesdays, February 3,
10, and 17
4:00-5:30 p.m.**

Young Members can learn how to make boxes, birds, animals, flowers, and fruit using only colored paper and their own folding fingers. At *Origami for Kids* professional paperfolder Michael Shall will introduce participants to the most basic folds, and the classes will learn more complex origami models each week.

Tickets are \$40 and avail-

able to Participating and Higher Members ages 8 and up. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Ice Fishing

**Saturday, February 6
9:00 a.m.-5:00 p.m.**

Join Friends of Fishes, curators from the Department of Ichthyology, and members of the Hudson River Foundation for a spectacular day of nature walks, ice fishing, and a gourmet catered lunch at Blue Mountain Lodge in Peekskill, New York.

Tickets are \$60 per person and available only to Participating and Higher Members. The fee includes lunch and roundtrip bus transportation from the Museum to Blue Mountain Lodge. For further information call (212) 289-3605 or fax (212) 427-6659.

Members' Tours of

**The Pierpont
Morgan Library**

**Thursday, February 18
10:30 a.m. and 1:00 p.m.**

**SOLD OUT
from previous issue**

Members can take a guided tour of the Pierpont Morgan Library, an elegant midtown building that houses a remarkable collection of artistic,

historical, and literary works. The institution's history and architecture will be discussed, along with the collection's growth from an assortment of Renaissance manuscripts and rare books to a fabulous treasury of paintings, sculptures, and objets d'art. The tours will also view the library's current exhibition *The Bernard H. Breslauer Collection of Manuscript Illuminations*.

The tours will last about an hour. Tickets are \$10 and available only to Participating and Higher Members ages 18 and up.

**Members' Workshop on
Japanese Cuisine**

**Sunday, February 28
11:00 a.m. and 1:30 p.m.**

Japanese culinary traditions and their relations to folklore are the focus of this Members' workshop, which also looks at Japanese dining and tea-drinking etiquette and gives some tips on eating with chopsticks.

The 90-minute programs will be presented by Pat Kinney in the Edith C. Blum Lecture Room. Tickets are \$15 and available only to Participating and Higher Members. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Classic Science-Fiction Film Series

***This Island Earth*
Saturday, February 6**

***Invaders from Mars*
Saturday, March 6**

**3:00 p.m.
Kaufmann Theater
\$4 for Members, \$7 for non-Members**

The Members' Classic Science-Fiction Film Series takes a look at some of the best sci-fi movies ever made. Brian Sullivan, the Hayden Planetarium's production designer, will introduce each movie in the series with a 30-minute slide show focusing on the film's special effects and other features that mark it as a filmmaking milestone.

February's feature is *This Island Earth*, a 1955 production directed by Joseph M. Newman, starring Jeff Morrow, Faith Donnergue, and Rex Reason. It is about Earthlings who find themselves trapped on a planet that's being bombarded by meteors

sent by an enemy planet. The film is 87 minutes long.

Invaders from Mars, next month's feature, is a 1953 cult favorite directed by William Cameron Menzies. David, the 12-year-old hero, is an amateur astronomer whose troubles begin when he sees a flying saucer disappear into a sandhill in his backyard. No one believes that David saw the flying saucer, not even when people are sporting peculiar X-shaped scars on their necks and acting very strange. Can David beat the Martians and save the world?

Use the February Members' programs coupon on page 3 to register.

A Fifth-Grade Special

Friends of Fishes has formed a new committee to educate students about the Hudson River and its fauna. The committee consists of students who want to share their enthusiasm for science by giving fifth-graders the opportunity for hands-on experience. The program will explore the variety of fish in the Hudson River through

informal discussion, displays, and a petting tank.

The 90-minute sessions take place two Saturdays each month. The program is open to all fifth-graders and is limited to 16 students per session. For further information call Heidi Michelsen, director of the Elementary Education Committee at (212) 289-3607 or fax (212) 427-6659.

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 2
February 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Evelyn Robbins — Proofreader
Peter Zelaya — Fulfillment Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY.

Printed by Waldon Press, Inc. New York

341



The Morgan Library's collection includes a twelfth-century Belgian triptych (top), the French "Banquet Scene" (left), and Albrecht Dürer's "Adam and Eve"

O'Keeffe and Stieglitz: An American Romance

Wednesday, February 10
7:00 p.m.
Kaufmann Theater
\$6 for Members, \$10 for non-Members

They were an extraordinary couple from the start. Alfred Stieglitz, a 52-year-old master of photography, was introduced to Georgia O'Keeffe's work before he ever met her. Although she was barely scraping by as a teacher, the 28-year-old O'Keeffe was uncowed by Stieglitz's reputation and enraged at his presumption in exhibiting her work. Evenly matched in

force of character, each was the other's critic and inspiration, and their love story is legendary.

Benita Eisler explores the myths and realities of the O'Keeffe-Stieglitz relationship as she discusses her book, *O'Keeffe and Stieglitz: An American Romance* (published in hardcover by Doubleday and in paperback by Penguin). Eisler chronicles the

stormy relationship between these artistic titans and captures the flavor of their times and milieu, from the vibrant bustle of New York in the twenties to the desert grandeur of Abiquiu, New Mexico. Eisler, a former art editor, will sign copies of her book, which will be available for purchase at the program.

Use the February Members programs coupon to register

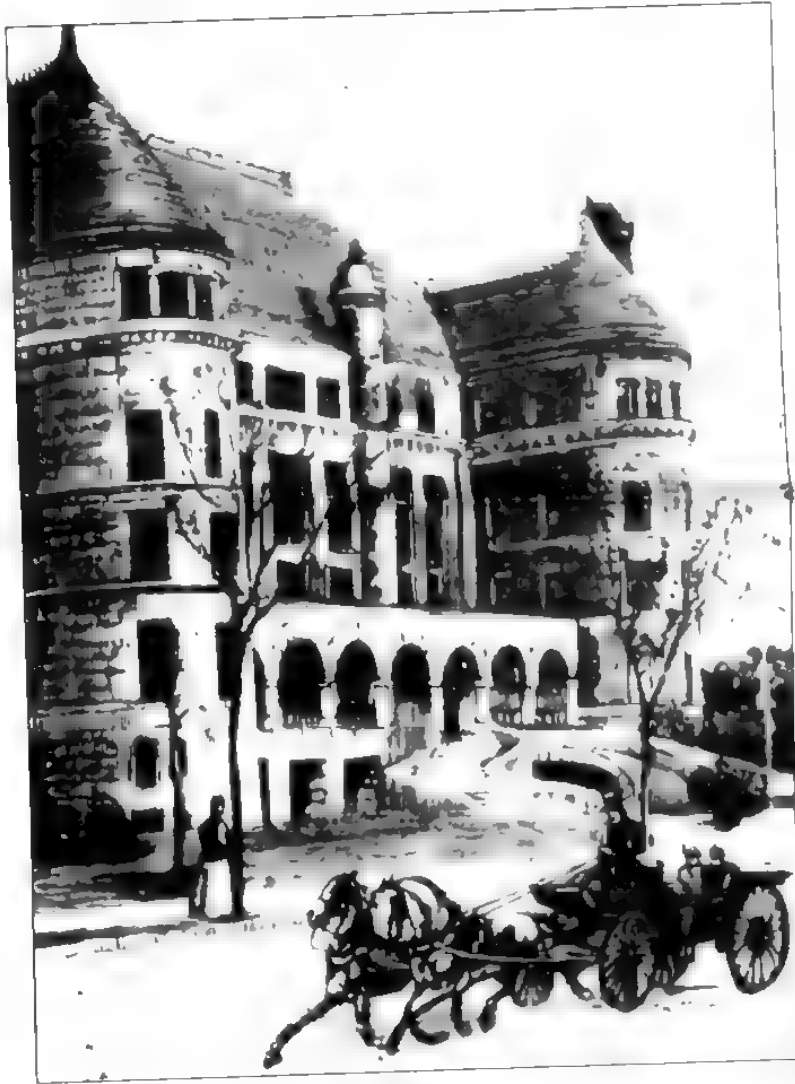
Members' Tours The Museum: Inside and Out

Friday, March 26
3:00, 4:30,
and 6:00 p.m.
\$16, and open only
to Participating and
Higher Members

Members can hear all about the natural history of the American Museum at special tours that explore the Museum's insides and outsides. Sidney Horenstein, the Museum's coordinator of environmental public programs, will lead a fascinating walk around this celebrated landmark and tell listeners the history of its construction.

The tours will step outside for an overview of the Museum's geology, geography, and varieties of architectural styles. Back inside, they'll survey the diversity of stones used in the building's construction and hear about the geological history the stones reveal. They'll also inspect the fossils that are trapped in the very walls.

The Museum: Inside and Out is an encore presentation of one of our most popular Museum tours, and prompt registration is advised for the limited number of places. Use the coupon at right to register, and please note tickets are available only by mail.



1891 Engraving of Museum façade

The Museum: Inside and Out. Friday, March 26. Please indicate a first, second, and third choice

___ 3:00 p.m. ___ 4:30 p.m. ___ 6:00 p.m.

Number of Members' tickets at \$16
(no more than 2, please): ___
Total amount enclosed for program: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Inside and Out*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

February Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to *February Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Telephone reservations are not accepted. No refunds or exchanges.

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

This Island Earth. Saturday, February 6, 3:00 p.m.
Number of Members' tickets at \$4: ___
Number of additional tickets at \$7: ___
Total amount enclosed for program: ___

O'Keeffe and Stieglitz
Wednesday, February 10, 7:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$10: ___
Total amount enclosed for program: ___

What the Bones Tell Us
Wednesday, February 17, 7:00 p.m.
Number of free Members' tickets
(no more than 2, please): ___
Number of additional tickets at \$4: ___
Number of non-Members' tickets at \$7: ___
Total amount enclosed for program: ___

The World of Animals. Saturday, February 20 Please indicate a first and second choice
___ 11:30 a.m. ___ 1:30 p.m.
Number of Members' tickets at \$5: ___
Number of additional tickets at \$8: ___
Total amount enclosed for program: ___

Rio Roosevelt. Thursday, February 25, 7:00 p.m.
Number of Members' tickets at \$7: ___
Number of additional tickets at \$10: ___
Total amount enclosed for program: ___

Echo of the Elephants. Thursday, March 4, 7:30 p.m.
Number of Members' tickets at \$8: ___
Number of additional tickets at \$12: ___
Total amount enclosed for program: ___

Invaders from Mars. Saturday, March 6, 3:00 p.m.
Number of Members' tickets at \$4: ___
Number of additional tickets at \$7: ___
Total amount enclosed for program: ___

Making Silent Stones Speak
Tuesday, March 9, 7:00 p.m.
Number of free Members' tickets
(no more than 2, please): ___
Number of additional tickets at \$4: ___
Number of non-Members' tickets at \$7: ___
Total amount enclosed for program: ___

Egyptian Priestesses and Power
Friday, March 19, 7:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$10: ___
Total amount enclosed for program: ___

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

Making Silent Stones Speak

Tuesday, March 9

7:00 p.m.

Kaufmann Theater

Free for Members, \$7 for non-Members



Cracking mongongo nuts with stone tools

Who were the earliest tool makers? How did they live, and what kinds of tools did they make and use? Most important, how did this early technology influence human evolution?

At the Members' program *Making Silent Stones Speak* archeologist Nicholas Toth will address these questions to offer a fascinating look at the world of our Stone Age ancestors. He'll transport listeners to the other side of the world — the savannas of East Africa, the plains of northern China, and the mountains of New Guinea — to show how early prehistoric sites have been discovered, excavated, studied, and interpreted. He'll also trace time back more than 2 million years to the point when a tool-making animal stood poised to step into the future of humankind.

Toth, who spent five years teaching himself to make and use Stone Age tools, will

describe the combination of intellectual detective work and hands-on experimentation that enabled him to make the silent stones speak. He'll explain how his re-creation of primitive technology helped him to reconstruct the lives of Stone Age humans and the beginnings of civilization.

In manufacturing stone tools, our primitive ancestors learned to favor their right hands over their left, thus encouraging "brain lateralization," the right-brain/left-brain split that plays a role in human intelligence and creativity. Tool making gave early humans access to new sources of food, including protein from meat, which helped the species grow, and created new forms of social behavior, including planning ahead for the manufacture and use of tools. Toth will discuss the movement of early humans away from Africa, how they tamed fire, and

when they began to domesticate plants and animals.

An expert in prehistoric technology, Nicholas Toth was described by the *San Francisco Chronicle* as "the scientific world's most experienced maker and user of primitive stone tools." A distinguished scholar, Toth holds graduate degrees from Oxford and Berkeley. His pioneering work has been featured in *National Geographic*, *Scientific American*, and many other publications. His book, *Making Silent Stones Speak: Human Evolution and the Dawn of Technology* (Simon and Schuster), which he wrote with anthropologist Kathy Schick, will be available for purchase at the program. Toth will sign copies of the book after the show.

This program is presented in conjunction with the upcoming opening of the Museum's newest permanent exhibition, the Hall of Human Biology and Evolution. The new hall will feature state-of-the-art technology that illustrates human biology, anatomy, evolution, and creativity. Members can attend a preview of the hall on Thursday, April 1 (details about the preview will appear in next month's *Rotunda*).

Use the February Members' programs coupon on page 3 to register.

What the Bones Tell Us

Wednesday, February 17

7:00 p.m.

Kaufmann Theater

Free for Members, \$7 for non-Members

There are no right or wrong interpretations of historical science, asserts anthropologist Jeffrey Schwartz. What counts, he says, are the data and the context in which evidence is assessed. At the Members' program *What the Bones Tell Us* Schwartz will explore conflicting ideas about human origins and evolution.

Focusing on the inner workings of archeology and anthropology, Schwartz explains what can be learned from fossils and fragments of ancient cultures and civilizations. Bone fragments can be used not only to identify animal species but also to tell of their past history. Studies of bones can show the land's past capacity to sustain animal life, whether domestic or wild. Every living creature — whether it's considered a part of a civilization, a species, or a diverse evolutionary group — has a unique history. This

makes its discovery more than just a matter of unearthing a fossil or sequencing a species' DNA; it's an issue of interpreting data in order to reconstruct the missing pieces of a puzzle.

A professor of physical anthropology at the University of Pittsburgh, Schwartz is also a research associate at the American Museum. Copies of his new book, *What the Bones Tell Us* (Henry Holt and Company) will be available for purchase at the program, and Schwartz will sign copies after the lecture.

This program is presented in conjunction with the upcoming premiere of the Museum's newest exhibition, the Hall of Human Biology and Evolution. Members will have the chance to preview the new hall — see next month's *Rotunda* for details.

Use the coupon on page 3 to register.

The 1992 Rio Roosevelt Expedition

Thursday, February 25

7:00 p.m.

Kaufmann Theater

\$7 for Members, \$10 for non-Members

Theodore Roosevelt's last adventure was a two-month odyssey down a 930-mile-long Amazon tributary that had never before been explored. This "River of Doubt" — so called because no one knew exactly where it went — has since been named for the former president, who nearly died during the 1914 expedition. Last year a team of 20 Brazilians and Americans used Roosevelt's extensive maps, photographs, and his book *Through the Brazilian Wilderness* to retrace his journey. Their historical comparison documented environmental changes in one of the world's most remote regions.

Tweed Roosevelt, Theodore Roosevelt's great-grandson, will tell Members about his experiences on the 1992 Rio Roosevelt expedition, which was only the third known navigation of the river. Nobody has traveled its length

since 1926, when a second expedition verified the original explorers' findings and quieted suspicions about the earlier journey's authenticity.

Two scientists from the American Museum were among the 1914 expedition members. The survey and mapping expedition, which was sponsored by the Brazilian government, is Theodore Roosevelt's "forgotten" expedition, overshadowed by his better-known adventures in Africa and the American West. The former Rough Rider and his party endured harrowing setbacks — several of their dugout canoes were sunk or crushed by rapids and rocks and had to be replaced on the spot. Virtually all of the explorers came down with jungle fever and infections or suffered other injuries, and three of them died.

The 1992 adventurers had the advantages of modern

conveniences such as satellite technology, freeze-dried food, and modern tents and insect repellents. Nonetheless they faced the ongoing discomforts of sweltering heat, rain, and high humidity along with the perils posed by insects, snakes, and piranha.

They encountered thousands of insects and hundreds of plant and fish samples, many of which had never been cataloged by outsiders. Tweed Roosevelt collected insects for the American Museum's Entomology Department and mollusks for Harvard's Museum of Comparative Zoology. He and the other expedition members found the region remarkably unchanged over the past 78 years and believe they experienced it much the way the former president did.

Use the February Members' programs coupon on page 3 to register for the program.

Egyptian Priestesses and Power

From Nefertiti to Cleopatra the Great

Friday, March 19

7:00 p.m.

Kaufmann Theater

\$6 for Members, \$10 for non-Members

Ancient Egyptian priestesses often served as divine consorts for the state's most important deities and played key roles in their husbands' reigns. Sometimes these women ruled as pharaohs in their own right.

At *Egyptian Priestesses and Power, from Nefertiti to Cleopatra the Great*, Robert Steven Bianchi will explore the fundamental concepts of the ancient Egyptian male-female relationships from a theoretical and religious perspective. He'll review the careers of Egypt's most illustrious women, from Nefertiti, the wife of the pharaoh

Akhenaten, to Cleopatra VII the country's last resident ruler.

Currently a J. Clawson Mills Fellow at the Metropolitan Museum of Art, Bianchi served as curator of the Egyptian Department at the Brooklyn Museum for 15 years, during which time he organized the international loan exhibition *Cleopatra's Egypt — Age of the Ptolemies*. His latest book, *Inside the Tomb of Nefertiti* was published in November by the J. Paul Getty Museum.

Use the February Members' programs coupon on page 3 to register for the program.

The World of Animals

Saturday, February 20
11:30 a.m. and 1:30 p.m.
Kaufmann Theater
\$5 for Members, \$8 for non-Members
Ages 5 and up



Join naturalist Bill Robinson for a real live look at wildlife ecology. His program *The World of Animals*, which shows how wild creatures adapt to their environments, features live animals on stage and a discussion of their roles in nature.

Guest stars include a legless lizard, an animal that has evolved to the point where it

resembles a snake save for its eyelids and tiny ear openings. Anyone who's seen *Raiders of the Lost Ark* has seen scores of these bizarre creatures — the movie's seething "snake" pit was actually filled with legless lizards. Robinson once attempted to rescue a "snake" from the path of an oncoming car only to find that the animal snapped in two in his hands; the legless lizard's tail, which is half of its length, breaks off in a struggle. Sometimes the predator is distracted by the wiggling tail and lets the upper body crawl off to safety (and to regenerate another tail).

A natural-born escape artist will join Robinson on stage. The armadillo can pull a get-away by using its powerful front legs to dig a burrow. Its dens are masterpieces of

engineering that measure up to six feet long with pits four feet deep. Robinson will explain why there may be as many as 11 armadillos in a litter but the males have no sisters and the females no brothers.

Among the other guests are a barking lizard, which will show its unusual method of bluffing predators, an alligator snapping turtle, a big king cobra, which will rear up and spread its hood, and a 16-foot-long python that daring volunteers from the audience can come on stage to help hoist. And a pair of feathered friends — an owl and a red-tailed hawk — will demonstrate their flight patterns by soaring over the audience.

Robinson, who presents his dramatic wildlife programs to thousands of schoolchildren each year, has appeared at the Museum for the past 13 years. Please note that all attendees, parents and children alike, must have tickets, and strollers and babes in arms will not be admitted to the theater. Use the February Members' programs coupon on page 3 to register.

Too Much Mail?

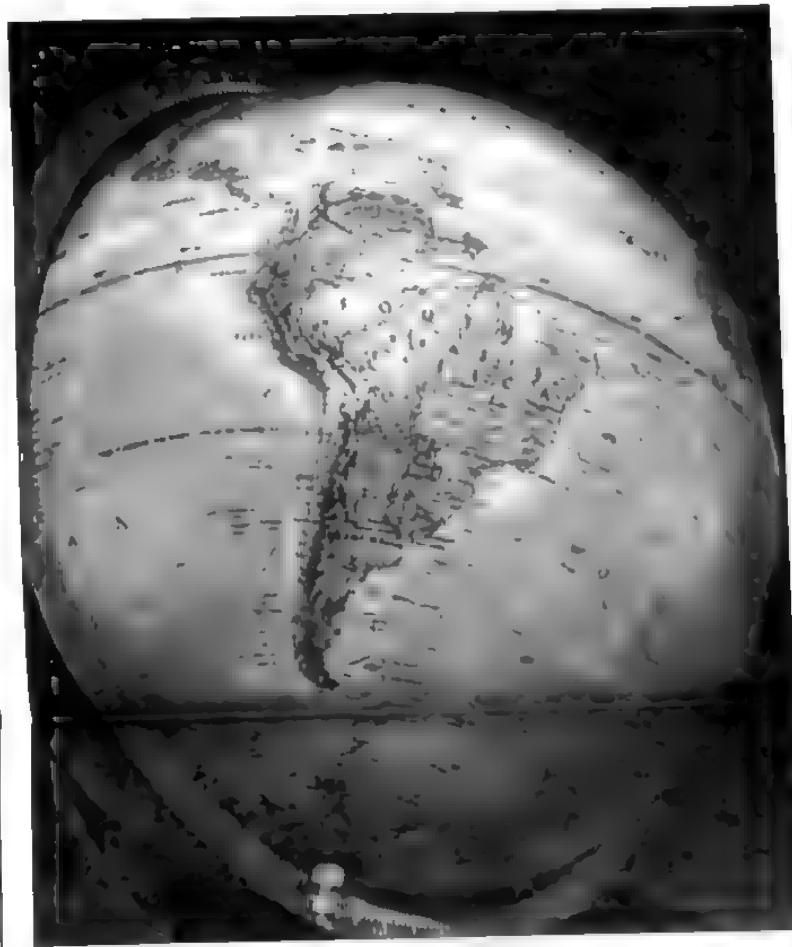
The Membership Office recently mailed a letter to prospective Members asking them to join the Museum. In spite of our best efforts to remove the names of our

current Members from this mailing, you may have received one of these letters. Please accept our apology. Would you consider passing the letter on to a friend? Your help in reaching new Members is greatly appreciated.

Members' Adult-Child Workshop

So You Want to Change the World?

Sunday, March 7
10:30 a.m.-noon and 1:00-2:30 p.m.
\$26 per couple, and open only to Participating and Higher Members
Ages 6-9



Here's your chance to transform the earth. Join June Myles for a globe making workshop in which you can create a fantasy planet, test your knowledge of world geography, or do something in between.

June will show you how to construct a sphere, and then you can play the role of cartographer and create a world of your own. You can give the earth a single landmass,

like in the days of the dinosaurs, or bestow an extra continent by splitting North America at the Grand Canyon. If you like the continents just the way they are, you can make a globe that depicts the animals unique to each region. The possibilities are endless.

Use the coupon below to register, and note that tickets are available only by mail.

Members' Day Trip to the

Norwalk Maritime Center

Sunday, March 21
9:00 a.m.-5:30 p.m.
\$50, and open only to Participating and Higher Members
Ages 13 and up



Members can take a guided tour of Connecticut's Norwalk Maritime Center, which is home to more than 125 species of maritime life in re-created Long Island Sound habitats. The center is located in a restored nineteenth-century foundry that overlooks an active waterfront filled with tugs and barges, fishing boats, and recreational vessels.

The center's aquarium offers a panorama of habitats and their characteristic maritime life, starting with a coastal salt marsh, progressing through 22 marine environments and concluding with a re-creation of the depths of the open ocean, where huge sharks, stingrays, bluefish, and other creatures swim in a 110,000-gallon tank.

Participants will watch the feeding of sharks and seals, then see the IMAX movie *To Fly* on a curved screen that's eight stories wide and six stories high. They'll also visit the new exhibit *Sharks!*, which features live sharks and rays and numerous hands-on

interactive displays. The exhibit chronicles the survival of sharks since the age of dinosaurs and shows why some species are now threatened with extinction.

Transportation from the Museum to the center will be by bus. Use the coupon below to register, and please note that tickets are available only by mail.

Members' Day Trip to the Norwalk Maritime Center.

Sunday, March 21, 9:00 a.m.-5:30 p.m.

Number of Members' tickets at \$50
(no more than 2, please): _____
Total amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Maritime Center, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Members' Adult-Child Globe-Making Workshop.

Sunday, March 7. Please indicate a first and second choice of times.

10:30 a.m. _____ 1:00 p.m. _____
Number of Members' tickets at \$26 (only 1 ticket is necessary per couple, no more than 2, please)
Total amount enclosed for program _____

Name _____

Address _____

City _____ State _____ Zip _____

Daytime telephone _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Globes, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Museum Spotlight Tours



Bears tours on Feb. 9 and March 9

The Volunteer Office has organized free Spotlight Tours of some of the Museum's most intriguing exhibits. The following Spotlight Tours will take place in February and March. For further information call (212) 769-5566

Pre-Columbian Treasures The Museum's newest hall, which opened in 1989, features the fascinating art treasures of South America. **Wednesdays, February 3 and March 3, 1:45 p.m.**

Creation of a Diorama. The Museum's timeless and realistic dioramas are among its outstanding features. Come discover how they are made. **Thursdays, February 4 and March 4, 1:45 p.m.**

Endangered Species. Profound environmental changes are making it difficult — and sometimes impossible — for certain animals to survive. Find out which creatures are most vulnerable and why they are in danger of extinction. **Fridays, February 5 and March 5, 6:30 p.m.**

Africa. Learn how animals and people have adapted to Africa's diverse environments in the halls of African Mam-

mals and Peoples. **Saturdays, February 6 and March 6, 1:45 p.m.**

Rain Forests. Although they constitute only 6 percent of the earth's surface, the rain forests are essential to all life on the planet and their destruction will be an irreplaceable loss. **Mondays, February 8 and March 8, 2:45 p.m.**

Bears. The temporary exhibition *Bears: Imagination and Reality* will open on June 4. Warm up for the exhibition with the Museum's resident bears. **Tuesdays, February 9 and March 9, 12:45 p.m.**

Minerals and Myths. For millennia people have used and worn minerals as an enhancement to physical and mental well being. Find out the origins of some popular myths about minerals and gems. **Wednesdays, February 10 and March 10, 12:45 p.m.**

Northwest Coast Indians. As social, political, and environmental conditions change, these weavers of wood and carvers of totem poles have adapted and survived. **Tuesdays, February 16 and March 16, 2:45 p.m.**

The Department of Education Presents

Spring 1993 Lecture Series



Gems and Crystals

Frontiers in Brain Science

These three perspectives on new explorations into the human brain take place on Tuesday evenings, starting March 2, from 7:00 to 8:30 p.m. \$27 for Members, \$30 for non-Members

March 2: *Nature's Mind: Left Brain, Right Brain, and Brain Maps.* Michael Gazzaniga of the Center for Neurobiology at UC Davis will present his findings concerning brain adaptations to environmental challenges

March 9: *How Did Human Language Evolve?* Steven Pinker of the Department of Brain and Cognitive Sciences at the Massachusetts Institute of Technology challenges the myth that language is a cultural invention

March 16: *Genes, Molecules, and Mind.* How do we think, feel, and remember? Ira B. Black, professor at the Robert Wood Johnson Medical School, will discuss altering brain functions in response to the environment.

African American Cemetery in New York

Three lectures by urban historian Sherrill Wilson and Jean Howson of the NYC Landmarks Commission will examine the history of New York City's African American community and spotlight new discoveries. The talks will be presented on three Monday evenings, starting February 22, from 7:00 to 8:30 p.m. \$27 for Members, \$30 for non-Members.

The Polar Explorers: Four Giants of the Arctic and Antarctic

Author Kenneth A. Chambers, lecturer in zoology and a scholar of the history of polar exploration, will trace four of the most exciting expeditions in polar history. The lectures will take place on four Thursday evenings, starting March 18, from 7:00 to 8:30 p.m. \$31.50 for Members, \$35 for non-Members.

Gems and Crystals

This four-session series offers a deeper appreciation of the rich history and diversity of one of the world's finest gem collections. Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, will present the lectures on four Thursday evenings, starting February 25, 7:00 to 8:30 p.m. \$31.50 for Members, \$35 for non-Members

An optional tour of the J.P. Morgan Hall of Gems is presented in conjunction with this series; the tour will be on Friday, February 26, from 7:00 to 8:30 p.m. \$15 (no discount for Members).

Culture on Film

This series, hosted by Elaine Charnov, a programmer of the Margaret Mead Film and Video Festival, will explore some of the ways in which filmmakers have represented other cultures. The programs will include special guest filmmakers and scholars and take place on three Tuesday evenings, starting February 23, from 7:00 to 8:30 p.m. \$27 for Members, \$30 for non-Members

Tiwanaku and New Research on the Origins of Andean States

New findings in Peru, Chile, and Bolivia indicate that the short-lived Inca empire inherited much of its sophisticated statecraft, religion, art, science, and culture from far more ancient societies like the unique Tiwanaku civilization. From its capital at well over 12,000 feet above sea level in Bolivia's altiplano, Tiwanaku dominated much of the southern Andes almost 1,000 years before the arrival of the Inca.

American Museum archeologist Paul Goldstein presents his own research on Tiwanaku in Peru and Chile in the context of the Museum's 100-year history of field studies of this fascinating and little-known civilization. This series will take place on two Monday evenings, March 1 and 8, from 7:00 to 8:30 p.m. \$21.50 for Members, \$25 for non-Members.

West African Archeology: Invisible Early Cities of the Niger River

Hundreds of massive city mounds and funerary tumuli dot the Niger River's inland flood plain south of the Sahara Desert. Excavations and surveys at the legendary cities of Jenne-jeno and Timbuktu have confirmed the great age and indigenous origin of Middle Niger urbanism. But until the late 1970s, these cities were invisible to archeologists. Therein lies the tale of how we look for urban civilization in Africa and in parts of the globe as far removed as northern China.

This slide-illustrated lecture is presented by Roderick J. McIntosh, professor of anthropology at Rice University, on Tuesday, February 23, from 7:00 to 8:30 p.m. \$13.50 for Members, \$15 for non-Members.

Other courses include *Wildflowers of the Northeast*, *Animal Drawing*, *Walking Tour of Spring Flowers and Trees in Central Park*, *Weekend for Bird Enthusiasts*, *Weekend Whale Watch off Cape Cod*, *Bird Identification for the Beginner*, and *Field Class in Bird Identification*. Use the coupon below to register, and for further information call (212) 769-5310

Lecture Series

I enclose a stamped self-addressed envelope together with a check (or money order) payable to the American Museum of Natural History for: \$ _____

Advance registration is requested, but registration will be accepted on the opening night if the course is not filled. Please call in advance: (212) 769-5310.

Course	No. of tickets	Price	Total
Course	No. of tickets	Price	Total
Name: _____			
Address: _____			
City: _____ State: _____ Zip: _____			

Daytime telephone: _____
Please make check payable to the American Museum of Natural History and mail with a stamped, **self-addressed envelope** to: **Lecture Series**, Department of Education, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Museum Notes

Hours

Exhibition Halls	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-8:45 p.m.
The Museum Shop	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-7:45 p.m.
The Junior Shop	
Mon.-Fri.	10:00 a.m.-4:45 p.m.
Sat. & Sun.	10:00 a.m.-5:45 p.m.
The Museum Library	
Tues.-Fri.	11:00 a.m.-4:00 p.m.
Diner Saurus Fast Service Eatery	
Daily	11:00 a.m.-4:45 p.m.
Garden Cafe	
Reservations: (212) 874-3436	
Lunch: Mon.-Fri.	11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.	5:30-7:30 p.m.
Brunch: Sat. & Sun.	11:00 a.m.-4:00 p.m.
Whale's Lair	
Fri.	3:00-8:00 p.m.
Sat.	Noon-8:00 p.m.
Sun. & most holidays	Noon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)	
Sat. & Sun.	11:00 a.m.-4:00 p.m.
The Discovery Room	
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10.	
Children must be accompanied by an adult.	
Closed on holidays and weekdays.	
Sat. & Sun.	Noon-4:30 p.m.
The Natural Science Center	
For children of all ages and their families.	
Closed on Mondays and holidays	
Tues.-Fri.	2:00-4:30 p.m.
Sat. & Sun.	1:00-4:30 p.m.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), and the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax

Tropical Rain Forest tells the story of the 400-million-year evolution of tropical rain forests. Daily showtimes are 10:30 and 11:30 a.m., 12:30, 1:30, 2:30, 3:30, and 4:30 p.m.

On Friday and Saturday evenings, Tropical Rain Forest is shown with The Magic Egg at 6:00 and 7:30 p.m.

Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members):
Adults: \$4 single feature; \$5.50 double feature
Children: \$2 single feature; \$3 double feature

Birthday Parties

Theme parties for young Members 5-10 years old are two hours long and held at 3:30 p.m. on Wednesdays, at 4:00 p.m. on Fridays, and at 11:00 a.m. or 2:30 p.m. on weekends. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child. (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769-5606 for further information.

Parking

The parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first-come, first-served basis. Call the Membership Office at (212) 769-5606 for information about alternative parking.

Sun.-Thurs. 9:30 a.m.-9:30 p.m.
Fri. & Sat. 9:30 a.m.-midnight
Cars: \$12; Buses: \$11

Museum Tours

Free Museum Highlights Tours are available to individuals and families. Tours are conducted daily at 10:15 and 11:15 a.m., 1:15, 2:15, and 3:15 p.m. Free Spotlight Tours are also available to individuals and families. Current Spotlight Tour topics appear on page 6.

Happenings at the Hayden

Sky Show

Bold Visions . . . Distant Shores

Long before European explorers reached the Americas these continents saw the rise of amazing civilizations — from North American deserts to Mexican jungles and the Andes. *Bold Visions . . . Distant Shores* explores the sophisticated skylore of the Maya, Aztecs, Inca, and Anasazi and the ways in which this knowledge influenced their daily lives. Through June 28

Showtimes:
Mon.-Fri. 1:30 and 3:30 p.m.
Sat. 11:00 a.m. (except for Feb. 6), 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Sun. 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Admission to the Sky Show for Participating and Higher Members is \$4 for adults and \$2 for children. For non-Members' prices and additional information, call (212) 769-5900

Lectures

On Wednesday, February 10, at 7:30 p.m., Margaret Geller of the Harvard Smithsonian Astrophysical Observatory will present an illustrated talk, "Mapping a Large Scale Structure of the Universe." She'll reveal surprising patterns in the universe that emerge through supercomputer animation as she presents three-dimensional representations of galaxies within a few hundred billion light-years of the Milky Way.

On Wednesday, March 3, at 7:30 p.m., cosmonaut Georgi M. Grechko of the Laboratory for Atmospheric Research in Moscow will present a talk, "The Soviet Space Program: Past, Present, and Future." Grechko will tell of his experiences with the Soviet space program, which began with his work as an engineer at Korolyov's famous design bureau. He was also involved in the unmanned lunar research program, which included Luna-9, the first spacecraft to soft-land on the moon. He'll then offer a personal, behind-the-scenes tour of the formerly top-secret Soviet space program.

These lectures are part of the *Frontiers in Astronomy and Astrophysics* series and will take place in the Sky Theater. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. Tickets can be purchased at the Planetarium box office on the nights of lectures, beginning at 6:30 p.m., or use the coupon at right to register, and for additional information call (212) 769-5900

African Skylore

On Tuesday, February 16, at 7:00 p.m., Cheryl Byron and Something Positive will present African storytelling under the Planetarium's starry dome. African sky lore will be told while dancers, musicians, and Planetarium effects enhance the tales.

This program is suitable for adults and children. Tickets are \$8 for Participating and Higher Members and \$10 for non-Members. Use the coupon at right to register, and for additional information call (212) 769-5900

Courses for Stargazers

The Planetarium offers a variety of courses on basic and advanced astronomy along with classes on meteorology and geology, aviation, and navigation. For further information about the courses call (212) 769-5900.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Feb. 6, and Sat., April 3, at 10:30 and 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope. For additional information, call (212) 769-5900

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5900.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920.

Lecture: "Mapping a Large Scale Structure of the Universe." Wednesday, February 10, 7:30 p.m.
Number of Members' tickets at \$6 ____
Number of non-Members' tickets at \$8 ____
Total amount enclosed for program ____

African Storytelling. Tuesday, February 16, 7:00 p.m.
Number of Members' tickets at \$8 ____
Number of non-Members' tickets at \$10 ____
Total amount enclosed for program ____

Lecture: "The Soviet Space Program: Past, Present, and Future." Wednesday, March 3, 7:30 p.m.
Number of Members' tickets at \$6 ____
Number of non-Members' tickets at \$8 ____
Total amount enclosed for program ____

Name _____

Address _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to: Lecture, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Sun

Mon

Tue

Wed

Thu

Fri

Sat

Mailing List

From time to time we make our Member list available to carefully screened companies whose products or services may be of interest to you. If you don't want to receive any promotional mail other than the Museum's, please send your mailing label from *Natural History* with a request to delete your name to:

Membership Office
No Promotional Mail
American Museum of Natural History
79th Street at Central Park West
New York, NY 10024-5192

Please be assured we will take prompt action

2 5:30-7:30 p.m. *Reading and Interpreting Topographic Maps and Making Topographic Models*

Members' workshop, part 1 \$40, and open only to Participating and Higher Members. Tickets required. Page 2.

3 4:00-5:30 p.m. *Origami for Kids*

Members' workshop, part 1. \$40, and open only to Participating and Higher Members. Tickets required. Page 2.
7:15 p.m. Amateur Astronomers Association. Kaufmann Theater. Free.

4

5

6 9:00 a.m.-5:00 p.m. *Ice Fishing*. \$60, and open only to Participating and Higher Members. Tickets required. Page 2.
3:00 p.m. *This Island Earth*. Members' classic science-fiction film series. Kaufmann Theater. \$4 for Members. \$7 for non-Members. Page 2.

9 5:30-7:30 p.m. *Reading and Interpreting Topographic Maps and Making Topographic Models*

Members' workshop, part 2 \$40, and open only to Participating and Higher Members. Tickets required. Page 2
7:30 p.m. Linnaean Society. Linder Theater. Free

10 4:00-5:30 p.m. *Origami for Kids*

Members' workshop, part 2. Tickets required. Page 2.
7:00 p.m. *O'Keefe and Stieglitz: An American Romance*. Members' evening program. Kaufmann Theater. \$6 for Members. \$10 for non-Members. Page 3.



12

13

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings, and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 100 private foundations, 520,000 members, and numerous individual contributors

14 2:00 p.m. NY Shell Club. Room 319. Free.

15 Presidents Day. The Museum is open

16 7:00 p.m. *African Skylore*. Planetarium Sky Theater. \$8 for Members, \$10 for non-Members. Page 7.
7:00 p.m. NY Entomological Society. Room 319. Free

17 4:00-5:30 p.m. *Origami for Kids*

Members' workshop, part 3. Tickets required. Page 2
6:30 p.m. Lapidary and Gem Society. Leonhardt People Center. Free
7:00 p.m. *What the Bones Tell Us*. Members' evening program. Kaufmann Theater. Free for Members. \$7 for non-Members. Page 4

18 10:30 a.m. and 1:00 p.m. *Members' Tours of the Pierpont Morgan Library*. \$10, and open only to Participating and Higher Members. Tickets required. Page 2. **SOLD OUT**

7:00 p.m. NY Microscopical Society. Room 319. Free

19

20 11:30 a.m. and 1:30 p.m. *The World of Animals*. Members' family program. Kaufmann Theater. \$5 for Members. \$8 for non-Members. Page 5.

21 10:30 a.m. NY Turtle and Tortoise Society. Room 319. Free

2:00 p.m. NY Paleontological Society. Room 319. Free

22

23 7:30 p.m. Linnaean Society. Linder Theater. Free

24

25 7:00 p.m. *The 1992 Rio Roosevelt Expedition*. Members' evening program. Kaufmann Theater. \$7 for Members. \$10 for non-Members. Page 4

26

27

New and Improved

A variety of renovations are under way at the Museum. We are giving a new look to our dinosaurs and creating an up-to-date exhibition hall illustrating human evolution.

While these renovations are taking place access to some exhibition halls will be restricted. The halls of Earth History, Late and Early Mammals, and Late and Early Dinosaurs are closed until further notice. Previews of the renovated

fossil halls on the fourth floor are on display in Gallery 77 *Work in Progress*. From *Drawingboard to Dinosaurs* features dinosaur bones and other specimens, along with models, plans, and drawings of the new halls now under construction. Dinosaur devotees should be sure to stop by the Roosevelt Memorial Hall on the second floor for a look at the *Barosaurus*, the world's tallest freestanding dinosaur exhibit.

The recently renovated Museum Library houses one of the world's greatest natural history research collections. The new facility features state-of-the-art environmental controls and compact storage to ensure the preservation of collections and an expanded reference area and reading room for staff and visitors. The library is located on the fourth floor and open to the public Tuesday through Friday, 11:00 a.m. to 4:00 p.m.



February 1993
American
Museum of
Natural History

28 11:00 a.m. and 1:30 p.m. *Japanese Cuisine*

Members' workshop. \$15, and open only to Participating and Higher Members. Tickets required. Page 2.
1:00 p.m. NY Mycological Society. Room 310. Free

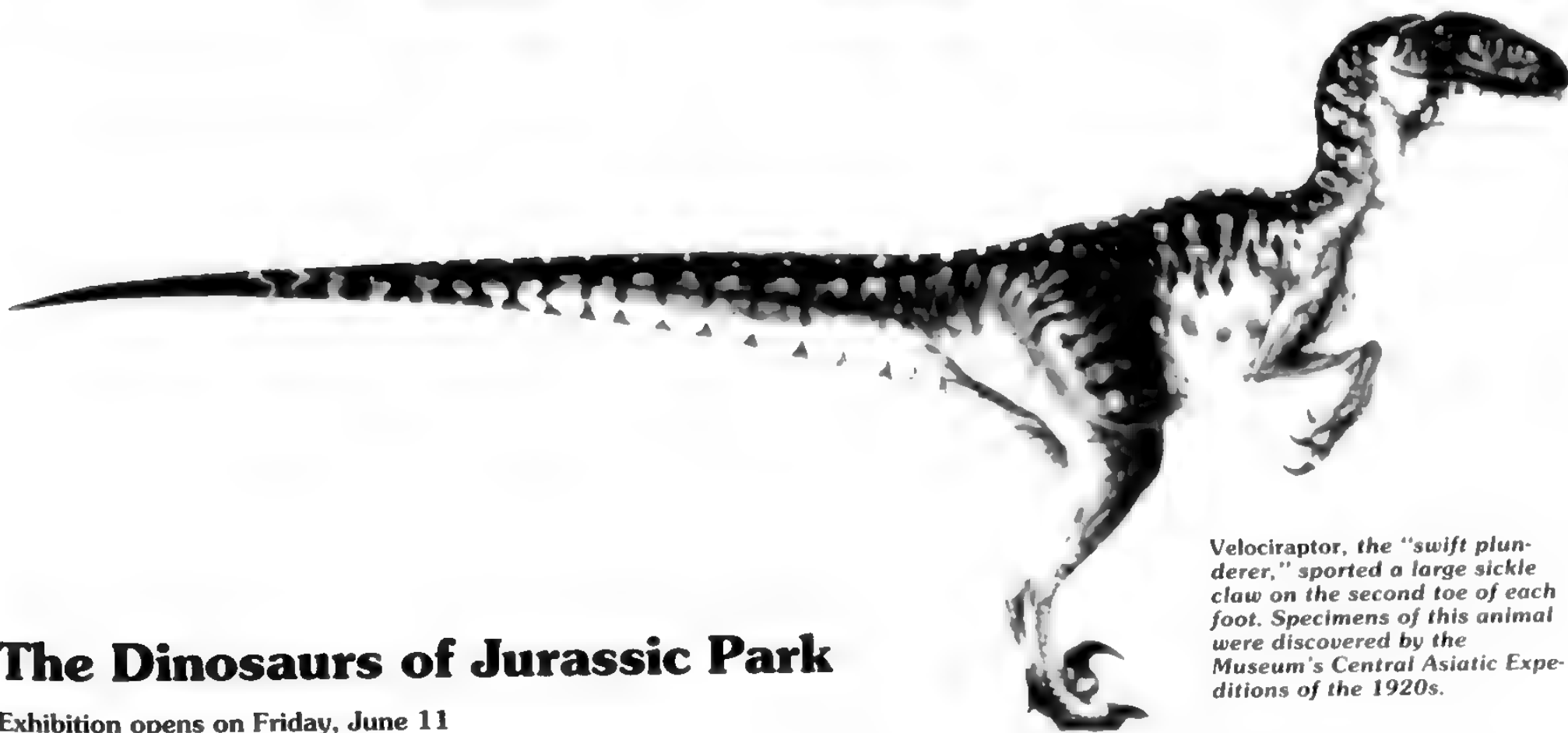
POTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol. 18, No. 6 June 1993



The stately Triceratops, a North American native, weighed up to six tons. Its massive head constituted one third of its length and afforded this vegetarian a formidable defense.



Velociraptor, the "swift plunderer," sported a large sickle claw on the second toe of each foot. Specimens of this animal were discovered by the Museum's Central Asiatic Expeditions of the 1920s.

The Dinosaurs of Jurassic Park

Exhibition opens on Friday, June 11

Cinematic magic meets scientific reality in the new exhibition *The Dinosaurs of Jurassic Park*, which arrives in Gallery 3 this month. Models of the dinosaurs that appear in Steven Spielberg's blockbuster movie will be on display at the Museum all summer.

The exhibition, which is jointly presented by the American Museum and the Dinosaur Society, was created by Research Casting International of Toronto and features specimens from the Museum's extensive fossil collec-

tions. *The Dinosaurs of Jurassic Park* will compare the speculative elements of the movie, which was based on Michael Crichton's best seller, with what is really known about dinosaur physiology and behavior. For example, *Jurassic Park*'s fictional dinosaurs were cloned from the DNA of an insect fossilized in amber. This insect had fed on a live dinosaur millennia ago. The exhibition will feature samples of insect-bearing amber and DNA from the Museum's

molecular lab

On Friday, June 11, the day the exhibition opens, Members can attend a special program to learn more about the fact-based and fictionalized aspects of *Jurassic Park*. James Clark, who is a Frick Postdoctoral Fellow in the Department of Vertebrate Paleontology and a member of the Mongolian-American Museum expedition to the dinosaur beds of the Gobi Desert, will discuss the extent to which the story is just a story. The program will

take place at 7:00 p.m. in the Kaufmann Theater. Tickets are \$7 and available only to Members; use the June Members' programs coupon on page 3 to register.

Please note that due to the extraordinary expense of assembling and maintaining this exhibition, there will be an admission charge to Gallery 3. General admission is \$5 for adults, \$2.50 for children, and \$3 for senior citizens. Members' admission is \$4 for adults and \$2 for children.

Remembering the Little Bighorn



1908 photograph of the Little Bighorn by E. S. Curtis

Friday, June 25, will mark the 117th anniversary of Custer's "last stand" at Little Bighorn. On that day Paul Stekler will present a Members' program that will explore how this particular event became an enduring historical icon.

Stekler will balance the more common perspective of whites with the seldom heard but equally compelling view of

the native people of the Northern Plains. At the conclusion of the lecture, he'll show his film, *Last Stand at Little Bighorn*, which is 53 minutes long.

The program will take place at 7:00 p.m. in the Kaufmann Theater. Tickets are \$8 for Members and \$12 for non-Members. Use the coupon on page 3 to register for the program

Bears: Imagination and Reality

Exhibition opens Friday, June 4, in Gallery 77

The popular images of bears — in myth, art, literature, and history — from prehistoric times to the present are contrasted with the reality of bears in nature in the new exhibition *Bears: Imagination and Reality*. In addition to fanciful depictions of the animal, including a variety of interpretations of "Goldilocks and the Three Bears," the exhibition portrays the bear as scientists and researchers know it. *Bears: Imagination and Reality* was produced by the Science Museum of Minnesota.

Members' Preview Thursday, June 3

Members can see the new exhibition before it opens to the public and attend a program on bear ecology. Volunteer Highlights Tour guides will be on hand in the gallery from 4:00 to 7:00 p.m. to point out exhibition highlights and answer questions.

The preview is free and open only to Participating and Higher Members. Your valid membership card will admit you and a guest to Gallery 77.

Afterward naturalist Andrew Simmons will present *Bear Facts*, a special Members' program that will guest-star a live black bear cub. Simmons, an expert at handling wild animals, will explain why some bears are threatened or endangered and discuss their adaptations for survival.

The program will take place at 7:30 p.m. in the Kaufmann Theater. Tickets are \$5; use the June Members' programs coupon on page 3 to register.

A Saturday with the Bears

Saturday, June 12
8:00 a.m.-2:00 p.m.

On Saturday, June 12, a variety of exhibition-related events will be offered. Choose some or all of the following activities, and use the coupon on page 3 to order tickets.

Breakfast with the Bears

Come to the Garden Cafe, located on the Museum's lower level, and start your day with the bears by having a hearty breakfast. The menu features granola with berries and nuts, croissants, brioche, and toast, served with butter, honey, and jam; scrambled eggs with smoked salmon; fruit garnish; and juice, coffee, and milk. Breakfast will be served from 8:00 to 9:00 a.m., and the price of \$12.75 per person includes tax and gratuity.

Exhibition Tours

These family tours of the exhibition will take place before the Museum opens to the general public. The tours, which last about 20 minutes, leave from the entrance to Gallery 77 at 8:40, 9:00, 9:20, and 9:40 a.m. No tickets are necessary for the tours, which are free and open only to Participating and Higher Members on a first-come, first-served basis upon presentation of a valid membership card.

A Movie, Workshop, and Bear Hunt

Real bears Bart and Douce are the stars of *The Bear*, an internationally acclaimed hit about two bears—a giant kodiak and an orphan cub—struggling to survive in the wilderness. The 1988 film was directed by Jean-Jacques



Annaud and is 93 minutes long. It will be shown from 10:30 a.m. to noon in the Linder Theater.

Tickets are available only to Participating and Higher Members ages 5 and older. In addition to the movie, the \$15 fee includes a bear crafts workshop, in which participants can create a folk art item with a bear motif to take home (drop in any time between noon and 2:00 p.m.), and a self-guided bear hunt, in which participants will receive a packet of bear facts that includes puzzles, games, and clues to a treasure hunt around the Museum to locate bears and bear artifacts. Hunters will receive a bear prize.

In addition, some items from the Museum's collections will be on display and Jean Augustin, senior technician in the Department of Mammalogy, will be on hand to discuss the specimens' significance.

Members' Guided Bear Hunt Friday, June 18 SOLD OUT

Volunteer Highlights Tour guides will show Members not only the guest bears of the new exhibition but also some of the Museum's resident bears. The tours will take place at 4:00 and 7:00 p.m. and are geared toward adults. Tickets, which are available only by mail, are free and limited to Participating and Higher Members.

Alien

The Members' classic science-fiction film series concludes this month with a screening of *Alien*, Ridley Scott's 1979 outer space thriller. "In space no one can hear you scream," warned the movie's ads, and Members are cautioned that the film's exceptionally realistic special effects might be disturbing to impressionable minds.

Alien, which is 124 min-

utes long, will be shown on Saturday, June 5, at 3:00 p.m. in the Kaufmann Theater. Before the movie starts Brian Sullivan, the Hayden Planetarium's production designer, will offer a 30-minute slide show pointing out the special effects and other features that make the film a classic. Tickets are \$4 for Members and \$7 for non-Members; use the coupon on page 3 to register.

Rediscovering Stone Age Tools

Members can see how the tools used by Paleolithic peoples and contemporary Aborigines and Indians are made at a lecture and demonstration. Anthropologist John Alexander of the Department of Vertebrate Paleontology, who has been making tools for almost 20 years, will discuss the ways in which these tools were manufactured by hunter-gatherers and demon-

strate the technique of flint-knapping, an ancient practice that was rediscovered by sixteenth-century gunsmiths.

The program will take place on Wednesday, June 9 from 5:30 to 7:30 p.m. Tickets are \$35 and available only to Participating and Higher Members. Call the Membership Office at (212) 769-5606 for information about ticket availability.

ROTUNDA

ISSN 0194 6110

Vol. 18, No. 6
June 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Socodato — Designer
Rita Campon — Copy Editor
Evelyn Robbins — Proofreader
Peter Zelaya — Fulfillment Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Printed by Waldon Press, Inc. New York

Members' Workshop

Deciphering the Human Skeleton

Wednesday, July 14

4:30-6:30 p.m.

\$40, and open only to Participating and Higher Members

Ages 18 and up

When only the bones remain, how much information about an individual can be reconstructed? Jeffrey Schwartz, professor of anthropology at the University of Pittsburgh and research associate in anthropology at the American Museum, will present an introductory workshop that examines the analyses and limits of forensic anthropology.

The workshop will begin by focusing on human variation and the degree to which an osteologist might find elements of skeletal anatomy significant in reconstructing an evolutionary history. Schwartz will discuss the features that are strictly anatomical "noise" and those that correspond to the criteria osteologists use to determine the sex of an individual. Participants will test the stereotypes of gender based on European material and see how consistently skeletal morphology can be termed male or female. They'll also observe how certain aspects of aging and disease can alter parts of the skeleton from "male" to "female."

Deciphering the Human Skeleton. Wednesday, July 14, 4:30-6:30 p.m. \$40, and open only to Participating and Higher Members. Ages 18 and up.

Number of Members' tickets at \$40
(no more than 2, please): _____
Total amount enclosed for program: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Deciphering*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The second half of the workshop will be specimen oriented. A geographically diverse sample of skeletal material will be available for a firsthand study of how much information can be extracted

from the bones.

Enrollment is limited, and a reading list will be provided upon registration. Use the coupon above to register, and please note that tickets are available only by mail.

Operation Berkshire

Tuesday, July 27

7:00 p.m.

Kaufmann Theater

Free for Members,

\$8 for non-Members

A cooperative covert law enforcement effort, *Operation Berkshire* was enacted to curtail the illegal commercial sale of protected species of fish and wildlife. Members can hear about the operation, which uncovered a large criminal network trafficking in illegal venison and — of all things — gallbladders from black bears.

Colonel Wayne Brewer will discuss the undercover operation, a three-year project that's considered the largest and most successful operation of its kind ever conducted in the Northeast.

The assistant director of law enforcement for the New York State Department of Environmental Conservation, Brewer will discuss the operation's dangers for the undercover officers, the lucrative market for bear gallbladders, and the international scope of the traffic in illegal fish and wildlife. He'll also discuss the use of wildlife remedies in Asian cultures.

Use the June Members' programs coupon at right to register for the program.

Fantasy Dinosaurs of the Movies

Tuesday, July 20

7:00 p.m.

Kaufmann Theater

\$9 for Members, \$12 for non-Members

Prehistoric animals have appeared in motion pictures since the early 1900s, when the medium itself was still primitive. The Members' program *Fantasy Dinosaurs of the Movies* is a retrospective of prehistoric animals on film that includes elements of film history and special-effects techniques. Some rarities will be featured among the clips from numerous motion pictures, including such early silent classics as *Gertie the Dinosaur* and *The Dinosaur and the Missing Link*. Excerpts from more familiar films like *One Million BC*, *King Kong*, *Gorgo*, *Godzilla vs. the Smog Monster*, and *Baby, Secret of the Lost Legend*, will be shown. The hour-long lecture will be followed by a question-and-answer session.

Donald F. Glut — aka "Dinosaur Don" — will host *Fantasy Dinosaurs of the Movies*, which is presented in conjunction with the *Jurassic Park* exhibition. Glut is the author of several books, including *The Complete Dinosaur Dictionary* and the



forthcoming *The Dinosaur Society Dinosaur Encyclopedia* (coauthored by Don Lessem). He has acted as creative consultant for the television specials *Dinosaurs* and *More Dinosaurs* and for a video produced by the Smithsonian Institution and has been involved in preparing exhibits at museums around the country.

Use the June Members' programs coupon at right to register.

June Members' Programs Coupon

Name _____

Address _____

City: _____ State _____ Zip _____

Daytime telephone: _____

Membership category _____

Total amount enclosed _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *June Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Telephone reservations are not accepted. No refunds or exchanges.**

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

Bear Facts. Thursday, June 3, 7:30 p.m.

Number of Members' tickets at \$5 _____

Total amount enclosed for program: _____

Alien. Saturday, June 5, 3:00 p.m.

Number of Members' tickets at \$4 _____

Number of additional tickets at \$7 _____

Total amount enclosed: _____

The Science Behind Jurassic Park

Friday, June 11, 7:00 p.m.

Number of Members' tickets at \$7 _____

Total amount enclosed: _____

Remembering the Little Bighorn

Friday, June 25, 7:00 p.m.

Number of Members' tickets at \$8 _____

Number of additional tickets at \$12 _____

Total amount enclosed: _____

Fantasy Dinosaurs of the Movies

Tuesday, July 20, 7:00 p.m.

Number of Members' tickets at \$9 _____

Number of additional tickets at \$12 _____

Total amount enclosed for program: _____

Operation Berkshire. Tuesday, July 27, 7:00 p.m.

Number of free Members' tickets

(no more than 2, please): _____

Number of additional Members' tickets at \$5: _____

Number of non-Members' tickets at \$8 _____

Total amount enclosed for program: _____

Saturday with the Bears

Saturday, June 12 (see the feature on page 2)

Number of Members' tickets for breakfast, movie, workshop, and bear hunt at \$27.75 each: _____

Number of Members' tickets for breakfast only at \$12.75 each: _____

Number of Members' tickets for movie, workshop, and bear hunt at \$15 each: _____

Total amount enclosed for program: _____

Name _____

Address _____

City _____ State _____ Zip _____

Daytime telephone: _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Saturday with the Bears*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Members' Walking Tours

Historian Peter Laskowich will walk with Members around some of New York's landmark buildings and point out vestiges of the city's past. Tickets for these tours are \$15 and available only to Participating and Higher Members ages 18 and up. Use the coupon below to register, and please note that tickets are available only by mail.

Grand Central Terminal and Park Avenue Tuesday, June 22 2:30-4:00 p.m. SOLD OUT

When the original Grand Central Terminal was proposed in the 1860s, the tabloids scornfully suggested an alternative name — End of the World. It's hard to believe now, but America's premier thoroughfare was once a tortuous stretch of wooded ravines and rocky hills.

In addition to exploring the roles of Grand Central and Park Avenue in the creation of present day New York, this walking tour will examine the remaining splendor of the grand design — in the subtle genius of the Grand Central viaduct and in the hidden nature of Park Avenue itself.

The Revolution and the New Nation in New York Wednesday, July 7 5:30-7:00 p.m.

New York was an occupied city during the Revolution — the British seized control in the summer of 1776 and remained for seven years, destroying one-third of the city during their stay.

The Hudson River was the colonies' indispensable waterway, and its control was the objective of early British plans of division and conquest. The river's defense is a dramatic tale of wealthy people who forsook their holdings for a cause, desperate souls who fought in the shadow of the gallows, and ingenious minds who devised a sort of submarine and stretched a great unbroken chain across the Hudson.

Manhattan retains visible remnants of the revolutionary era. Participants in this walking tour will observe evidence of patriotic fervor at Bowling Green, learn about specific Iroquois contributions to the Constitution, and hear of a victory so stunning that the band at Yorktown played "The World Turned Upside-Down."

Chelsea: The New York of a Century Ago Tuesday, August 17 3:00-4:30 p.m.

Although it bears little resemblance to its eighteenth-century estate form, Chelsea has resisted change more successfully than most other city neighborhoods. Its coal chutes, horse-walks, and bootscrapers bear witness to a bygone age. The Chelsea Hotel is an acknowledged landmark and the General Theological Seminary a hidden one.

Participants on the walking tour will feel how the area's long streets make Chelsea's blocks the polar opposite of Broadway. They'll see how the stoop expressed a class's conspicuous consumption, and they'll discover in the streets of this enclave the way of life of a generation long past.

Summer Workshops for Kids

Monday, August 9-Friday, August 13
Ages 7-9



Children will learn the bear facts on August 12

Between the *Jurassic Park* dinosaurs in Gallery 3 and a bevy of bears in Gallery 77, the Museum will be an especially exciting habitat this summer. Young Members can join June Myles for a fun-filled week that includes mid-week workshops at which kids will bring bag lunches and picnic outdoors in between their immersion in dinosaurs, birds, or bears.

Tickets are \$15 per workshop for the half-day programs on Monday and Friday and \$30 for the midweek activities. The workshops are open only to Participating and Higher Members, and enrollment in each workshop is limited to 20 participants. Use the coupon below to register, and please note that tickets are available only by mail.

Know Your Noses Monday, August 9 10:30 a.m.-noon

Participants will rove the Museum to seek creatures with oversized noses. They'll learn how these animals use their jumbo proboscises and create really "nosey" masks.

Jurassic Park, NYC Tuesday, August 10 10:30 a.m.-2:30 p.m.

Steven Spielberg's dinosaurs are in town, and after viewing these Hollywood celebrities kids will make some dinosaur models to fit their own scripts. They'll also see some authentic dinosaur fossils and make some take-home fossils. Both meat-eaters and plant-eaters should bring lunch.

Bird Stats Wednesday, August 11 10:30 a.m.-2:30 p.m.

Children will survey the

Museum's displays of our feathered friends — the largest, the fastest, and the great swimmers (yes, birds can swim) — and then honor these flying stars by making a bird mobile. Weather permitting, they'll share their lunch with the birds in Central Park and play a game or two while observing the antics of our local birds. If it rains, they'll see a Naturemax presentation of *Antarctica*; if not, they'll visit the Central Park Zoo. Also, each child will build a simple birdhouse to take home and rent out to a nearby feathered family.

Bears Thursday, August 12 10:30 a.m.-2:30 p.m.

Like many other Plains Indians, Crazy Horse admired the strength of bears, and he carried a shield emblazoned with a bear symbol. Participants can look at Crazy Horse's shield and other Na-

tive American bear images featured in the exhibition *Bears: Imagination and Reality*. They'll see the differences between fairy-tale bears (like Goldilocks' hosts) and natural-born bears, and depending on the weather they'll either visit the Central Park Zoo or view the Naturemax film *Antarctica*. Kids will also make their own bear hats, which will ensure their status as "top bears" at home for the rest of the summer.

Leaf Literacy Friday, August 13 10:30 a.m.-noon

Explore the forest community and the trees inside and outside the Museum. Kids will look at some of the creatures hidden by the leaves and how their lives depend on the trees. Each child will make a "leaf sampler" of trees commonly found in Central Park that can be a guide to tree ID on subsequent park visits.

Members' Walking Tours. \$15 per tour, and open only to Participating and Higher Members. Ages 18 and up. Please indicate number of tickets per tour:
____ *Revolution in New York*, Wednesday, July 7
____ *Chelsea*, Tuesday, August 17
Number of Members' tickets at \$15 (no more than 2 per tour, please): ____
Total amount enclosed for program: ____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Walking Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Summer Workshops for Kids

Know Your Noses, Mon. Aug. 9

No. of tickets at \$15: ____

Jurassic Park, NYC, Tues., Aug. 10

No. of tickets at \$30: ____

Bird Stats, Wed., Aug. 11

No. of tickets at \$30: ____

Bears, Thurs., Aug. 12: No. of tickets at \$30: ____

Leaf Literacy, Fri., Aug. 13: No. of tickets at \$15: ____

Total amount enclosed: ____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Summer Workshops, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Members' Day Trip to

Kensico Dam and Reservoir

Thursday, July 15
9:00 a.m.-5:00 p.m.
\$50, and open only to Participating and Higher Members
Ages 18 and up

Sidney Horenstein, the Museum's coordinator of environmental public programs, will host a trip to Kensico Dam and Reservoir, a vital component of the city's water-supply system. Members will have an opportunity to admire the dam's structure and architectural beauty. Participants will take a look

at the dam's intake chambers and chlorinating plant, and they'll visit the water-testing lab to see how New York City's supply is monitored to ensure the high quality of its potable water. Horenstein will discuss the ecology of reservoirs and explain Kensico's importance in the structure of the water-supply system

The dam is located in central Westchester, near Valhalla. Transportation will be by bus from the Museum, and participants should be sure to wear comfortable clothes and bring a bag lunch. Use the coupon at right to register, and please note that tickets are available only by mail

Members' Day Trip to Kensico Dam and Reservoir. Thursday, July 15, 9:00 a.m.-5:00 p.m. \$50, and open only to Participating and Higher Members. Ages 18 and up

Number of Members' tickets at \$50 (no more than 2, please):
Total amount enclosed for program:

Name
Address
City: State Zip
Daytime telephone
Membership category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Kensico, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

How Water Works

Tour of NYC's Water Supply and Pollution Control Systems

Thursday, July 8
9:00 a.m.-5:00 p.m.
\$50, and open only to Participating and Higher Members
Ages 18 and up

Members can observe a paragon of modern-day engineering on a tour of the New York City water supply system. The much-vaunted system provides the best-quality municipal water in the world, and participants can observe some of the workings of the current system and the city's planned improvements for the future. Participants will

also see how the city treats its waste water and storm flow. The trip will begin with an extensive tour of the Ward's Island Pollution Control Plant. From there Members will travel to the Bronx for a tour of the Jerome Park Reservoir and Pilot Filtration Plant. The tours will view part of the Third Water Tunnel in the Bronx, where Members will

descend more than 200 feet below Van Cortlandt Park to observe the internal water works. The trip will conclude at Hillview Reservoir. Representatives from the Department of Environmental Protection will be on hand at all of the sites to explain aspects of the system, and Sidney Horenstein, the Museum's coordinator of environmental public programs, will lead the tours. Tickets are \$50 each. The fees for this program are for transportation and educational presentations only; there is no admission charge for tours of the sites. No food will be available on the tours, so be sure to bring a bag lunch and beverages. Use the coupon at right to register, and please note that tickets are available only by mail

How Water Works: Members' Tour of the NYC Water Supply and Pollution Control Systems Thursday, July 8, 9:00 a.m.-5:00 p.m. \$50, and open only to Participating and Higher Members. Ages 18 and up

Number of Members tickets at \$50 (no more than 2, please):
Total amount enclosed for program

Name
Address
City: State Zip
Daytime telephone
Membership category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Water Works, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Members' Whale Watch

Come aboard an Okeanos Ocean Research Foundation vessel to watch for whales and seabirds, sharks, turtles, and a variety of fishes. A naturalist will explain the range of whales and other sea creatures that may be encountered, and volunteers will be available throughout the cruise to answer questions. The whale watch will take

place on Thursday, July 29, from 7:00 a.m. to 8:00 p.m. Members will travel by bus from the Museum to Montauk, where they'll cruise for 4½ hours. Tickets are \$75 and available only to Participating and Higher Members ages 13 and older. Use the coupon below to register, and please note that tickets are available only by mail.

Members' Whale Watch. Thursday, July 29, 7:00 a.m.-8:00 p.m. \$75, and open only to Participating and Higher Members. Ages 13 and up.

Number of Members' tickets at \$75:
Total amount enclosed for program:
Name:
Address:
City: State Zip
Daytime telephone:
Membership category:

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Whale Watch, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Clearwater Sail

Thursday, July 22
1:00-4:00 p.m.
\$36, and open only to Participating and Higher Members
Ages 8 and up

Come aboard the "classroom of the waves" to help hoist the sails and learn about Hudson River ecology. The Clearwater vessels are replicas of the vessels that linked the riverfront communities during the eighteenth and nineteenth centuries.

The crew will discuss the Hudson's ecology and the problems arising when ecological relationships are ignored. They'll show how the environment might be made cleaner, healthier, and more productive, and they'll illustrate life within the river with the sloop's nets and other equipment.

Sailors must be at least 8 years old; children under that age will not be permitted aboard. Be sure your clothes are warm and casual (soft-soled, flat-heeled shoes are advised). This cruise is an environmental excursion, not a learn-how-to-sail trip. Because of the limited enrollment, participants are

confined to four tickets per request. Tickets are available only by mail order, use the coupon below to register

Clearwater Sail. Thursday, July 22, 1:00-4:00 p.m. \$36, and open only to Participating and Higher Members. Ages 8 and up.

Number of Members' tickets at \$36 (no more than 4, please):
Total amount enclosed for program

Name
Address
City: State Zip
Daytime telephone
Membership category

Please make check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Clearwater, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Why Me?

A program for the hearing impaired

Saturday, June 12
2:00 and 4:00 p.m.

PROGRAM CANCELLED

Playwright Bara Caseley Swain returns to the Museum for the premiere of *Why Me?*, a portrayal of courage in the face of personal conflict. An engaging one-act play, the program will be signed as well as spoken. *Why Me?* is presented by Panacea Productions.

This free program will take

place in the Kaufmann Theater. There are no tickets or reservations, seating is limited and available on a first-come, first-served basis.

This program is made possible by a gift to the Education Department from the Vidda Foundation. For information call (212) 769-5186.

A Call to Teach

Each year thousands of schoolchildren visit the Museum. We need you as a teaching volunteer to answer their questions and add to their sense of wonder about the world. Teaching volunteers work with classes on schoolday mornings. Previous teaching experience is not required; we will train you. The next teaching volunteer training program starts this fall.

Call the Museum's Volunteer Office at (212) 769-5566 for an application.

John Burroughs Book Awards

Naturalist Vincent G. Dethier was awarded the 1993 John Burroughs Medal Award for Nature Writing for his book *Crickets and Katydid*, *Concerts and Solos* (Harvard University Press, 1992).

The annual award is presented to the finest natural history book published in the previous three years — a work combining scientific accuracy, firsthand fieldwork, and literary skill. *Crickets and Katydid*, *Concerts and Solos* is a story of the musicianship of courting crickets, katydids, and grasshoppers during the summer of 1938.

Dethier is the Gilbert L. Woodside Professor of Zoology at the University of Massachusetts at Amherst. His other books include *Ecology of a Summer House*, *To Know a Fly*, *Fairweather Duck*, *The Ant Heap*, *Man's Plague*, and *World of the Tentmakers*.

1992 John Burroughs List of Nature Books for Young Readers

The Young Readers' List

was established in 1988 to recognize John Burroughs' efforts to inspire young naturalists. His nature essays for children were published a century ago in special school editions and caused nature study to blossom in classrooms all over America.

The books selected for the list feature perceptive and artistic accounts of direct experiences in the world of nature. The list seeks to encourage writers, artists, and publishers to produce books that invite young readers to explore nature.

Come Back, Salmon Molly Cone, Sierra Club Books for Children.

Elephants Calling Katharine Payne, Crown Publishers, Inc.

John Muir, Wilderness Protector Ginger Wadsworth, Lerner Publications Co.

Nature Spy Shelley Rotner and Ken Kreisler, Macmillan.

Orphan: The Story of a Baby Woodchuck Faith McNulty, Scholastic Inc.

The Night of the Whip poorwill Nancy Larnick, Philomel Books.

The Call of the Running Tide: A Portrait of an Island Family Nancy Price Graff Little, Brown, and Co.

Workshops and Field Trips

The Department of Education presents the following programs. For further information call (212) 769-5310.

Marbling: An Ancient Paper Craft

On Saturday, June 5, an all-day workshop will offer instruction in the production of marbled paper. Participants will use a variety of techniques to produce about ten sheets of marbled paper each. The workshop will take place from 11:00 a.m. to 6:00 p.m. The fee is \$65 (no discount for Members). Materials are included and enrollment is limited to 20 adults.

Travel Photography in Pennsylvania

A photographic field trip explores and captures on film the charm of New Hope, Pennsylvania, and the scenic surroundings of Bucks County. Professional photographer Willa Zakin leads the tour, working with participants individually and in groups. The trip will take place on Saturday, June 5, from 9:00 a.m. to 6:30 p.m. The fee is \$75 (no discount for Members), and enrollment is limited to 25 adults.

Geology Boat Cruises

A Geology Cruise Around Manhattan

On Tuesday, June 1, from 6:00 to 9:00 p.m., a three-hour boat trip around Man-

hattan surveys regional geology. Fees are \$22 for Members and \$25 for non-Members. Adults only.

The Nooks and Crannies of Western New York Harbor

A unique opportunity to learn about the formation of metropolitan New York's bays and other waterways awaits participants on Tuesday, June 8, from 6:00 to 9:00 p.m. Fees are \$22 for Members and \$25 for non-Members. Adults only.

Exploring the Brooklyn Shoreline

On Saturday, June 5, from 11:00 a.m. to 4:00 p.m., a cruise along the Brooklyn shore spotlights local history and geology. Fees are \$32 for Members and \$35 for non-Members. Adults only.

Leonhardt People Center

1:00-4:30 p.m.

June 5 and 6

Shinjin. Dawn Saito uses Butoh, a contemporary Japanese dance style, to celebrate *shinjin*, a Buddhist term expressing realization of the Buddhah mind.

Anti-Asian Violence: A Rising Trend. The Committee Against Anti-Asian Violence (CAAUV) discusses the historical antecedents to anti-Asian violence and explains their attempts to resolve such problems through community empowerment.

Godzilla's "The Curio Shop". Nina Kuo, a member of the arts organization Godzilla, shows slides from the exhibit "The Curio Shop," which challenges the limited ways in which Asian-Americans are viewed by other cultures.

June 12 and 13

America Is in the Heart. Kabayan Players present

highlights from *America Is in the Heart*, a play adapted from Carlos Bulosan's novel of the same title that depicts the experiences of Filipino migrant workers in the 1930s.

Asian-American Studies. John Ko and Kelly Nishimura talk about Asian-American studies as part of a growing multicultural awareness.

Roots to Reality. Corky Lee, who has documented and photographed the experiences of the Asian-American community for 20 years, explains his attempts to rectify forgotten and omitted elements.

June 19 and 20

The People Center is closed for Father's Day weekend.

June 26 and 27

Rainbow of Sound. Members of Mamma Tongue per-

form music derived from Western harmonies, West African rhythms, and Sioux melodies.

Warrior Women Wizards. Robin Holder shows slides of her artwork to explain the relevance of female empowerment and living in harmony with nature.

No tickets are necessary for these free programs. Seating is limited and on a first-come, first-served basis. For further information and a brochure, call (212) 769-5315.

These Education Department programs are made possible in part by grants from the Chase Manhattan Bank, Citibank, and gifts from the Samuel and May Rudin Foundation, the Henry Nias Foundation, Vidda Foundation, and the family of Frederick H. Leonhardt.

Contact: Cultural Change, Alternative Perspectives

The final segment of the Education Department's year-long series in observation of the Columbian Quincentennial looks at contemporary themes and issues facing indigenous peoples. For further information and a brochure, call (212) 769-5315.

American Indians: European Contact and the Doctrine of Discovery Sunday, June 6

Tonya Gonnella Frichner, Esq., discusses the political and social ramifications of the legalities used to justify 500 years of conquest and domination, including the Doctrine of Discovery and Manifest Destiny. She will also discuss the influences of native cultures on European society. Frichner is a member of the Onondaga Nation, Snipe Clan of the Haudenosaunee, and president of the American Indian Law Alliance. 2:00 p.m., Kaufmann Theater.

Contemporary Japanese Dance Sunday, June 13

Saeko Ichinohe and Company present a program in which a new work and a juxtapositioning of traditional and contemporary movements illustrate the changing culture of contemporary Japan. In addition to performances by Ichinohe, the program features dancers Yukie Okuyama and Jeff Moen. 2:00 and 4:00 p.m., Kaufmann Theater.

Family Across the Sea Tuesday, June 15

This film traces how scholars have uncovered the connection between the Gullah people of South Carolina and citizens of Sierra Leone. *Family Across the Sea* shows how African-Americans kept their ties with their homeland over centuries of oppression through their speech, songs and customs. Produced by South Carolina Educational Television (56 min., 1991). 7:00 p.m., Kaufmann Theater.

A Question of Color Tuesday, June 22

The first documentary to confront "color consciousness" in the black community, *A Question of Color* explores the devastating effects of a caste system based on conformity to European ideals of skin color, hair texture, and facial features. Produced and directed by Kathe Sandler (58 min., 1992). Mamadou Chinyelu, an expert on African cultural practices and values in the Western Hemisphere, will offer commentary on both films. 7:00 p.m., Kaufmann Theater.

Tribute to our Ancestors Sunday, June 27

CINQUE Folkloric Dance Theater performs the music and dance of West Africa, Cuba, Brazil, Haiti, Puerto Rico, and the United States. The company's dancers, acrobats, mimes, and musicians hail from many countries of the African diaspora. 2:00 p.m. and 4:00 p.m., Kaufmann Theater.

Saltwater Fly Fishing

Friends of Fishes is sponsoring a family cookout on the beach at which participants can fish, learn to fish, seine, or just sit back and relax. Bring waders, boots, bathing suits, towels, snorkels, fishing gear, and a hearty appetite for the gourmet cookout with wine, beer, soft drinks, and pastries.

The cookout will take place on Sunday, June 13, from 4:00 to 9:00 p.m. at Sherwood Island Park in Westport, Connecticut. Anglers will be guided by Paul Dixon of Orvis, New York, Michael Noyes and John Picicelli of the Sportsman's Den of Green-

wich. Peter Bodo of the New York Times, Jerry Wolland, president of NYC Trout Unlimited, and members of the Salty Flyroders. Curators from the Department of Ichthyology will be on hand to help seine and identify fishes.

For fishing information call Paul Dixon at Orvis New York at (212) 697-3133, and Michael Noyes or John Picicelli at the Sportsman's Den at (203) 869-3234. For registration information, call Friends of Fishes at (212) 289-3605 or fax (212) 360-6625. Tickets, which are \$60 for adults and \$30 for children under 12, may be ordered by mail, make your check payable to Friends of Fishes/AMNH, and mail it with a stamped, self-addressed



envelope to: Friends of Fishes, Department of Ichthyology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Please specify date, number of tickets, and daytime and evening telephone numbers

Museum Notes

Hours

Exhibition Halls	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-8:45 p.m.
The Museum Shop	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-7:45 p.m.
The Junior Shop	
Mon.-Fri.	10:00 a.m.-4:45 p.m.
Sat. & Sun.	10:00 a.m.-5:45 p.m.
The Museum Library	
Tues.-Fri.	11:00 a.m.-4:00 p.m.
Diner Saurus Fast Service Eatery	
Daily	11:00 a.m.-4:45 p.m.
Garden Cafe	
Reservations: (212) 769-5865	
Lunch: Mon.-Fri.	11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.	5:30-7:30 p.m.
Brunch: Sat. & Sun.	11:00 a.m.-4:00 p.m.
Whale's Lair	
Fri.	3:00-8:00 p.m.
Sat.	Noon-8:00 p.m.
Sun. & most holidays	Noon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)	
Sat. & Sun.	11:00 a.m.-4:00 p.m.

The Discovery Room
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10. Children must be accompanied by an adult. Closed on holidays and weekdays.
Sat. & Sun. Noon-4:30 p.m.
The Natural Science Center
For children of all ages and their families. Closed on Mondays and holidays.
Tues.-Fri. 2:00-4:30 p.m.
Sat. & Sun. 1:00-4:30 p.m.

Entrances
During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax
The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth. Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily. Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at

12:30, 2:30, and 4:30 p.m.
On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical Rain Forest. The Museum offers a dinner theater package that includes admission, double feature, and dinner in the Garden Cafe. For reservations call (212) 769-5350.
Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.
Admission (Participating and Higher Members)
Adults \$4 single feature; \$5.50 double feature
Children \$2 single feature; \$3 double feature

Parking
The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first come, first-served basis; fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from 9:30 a.m. to midnight on Friday and Saturday.
Hertz Manhattan, located one block away from the Museum at 210 West 77th Street (between Broadway and Amsterdam), offers parking discounts to Members — on Monday through Friday Members receive a \$2 discount off regular prices and on Saturday and Sunday Members receive a \$3 discount.
Call the Membership Office at (212) 769-5606 for information about alternative parking.

Happenings at the Hayden

Special for Families

On Saturday, June 12, 19, and 26, at 11:00 a.m., the Planetarium will present *Teddy's Quest*, a new Sky Show for children ages 3 to 10. All kids are encouraged to bring their teddy bears—admission for the bear is free.

Teddy's Quest, which is presented in conjunction with the Museum exhibition *Bears: Imagination and Reality* (see page 2), tells the story of a teddy bear who was born in space and sets out on a quest to find a friend. As Teddy travels through space, he learns many things, including how stars are formed, how to identify constellations, and what it's like on the moon.

Tickets for Participating and Higher Members are \$4 for adults and \$2 for children. Use the coupon at right to order tickets, and for non-Members' prices and additional information, call (212) 769-5900.

Sky Show

Bold Visions . . . Distant Shores

Long before European explorers reached the Americas these continents saw the rise of amazing civilizations — from North American deserts to Mexican jungles and the Andes. *Bold Visions . . . Distant Shores* explores the sophisticated skylore of the Maya, Aztecs, Inca, and Anasazi and the ways in which this knowledge influenced their daily lives. Through June 28.

Showtimes:
Mon.-Fri. 1:30 and 3:30 p.m.
Sat. 11:00 a.m. (except for June 5),
1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Sun. 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Admission to the Sky Show for Participating and Higher Members is \$4 for adults and \$2 for children. For non-Members' prices and additional information, call (212) 769-5900.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., June 5, at 10:30 and 11:45 a.m., and Sat., July 10, at 10:30 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., July 10, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900.

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5900.

Donate canned foods during the month of June and receive a 10 percent discount in the Planetarium gift shop. All food will be donated to the Children's Aid Society.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920 or (212) 769-5100.

Teddy's Quest. Members can purchase up to 4 tickets at the Members' price. Please indicate a first and second choice.

Sat., June 12, 11:00 a.m. ____
Sat., June 19, 11:00 a.m. ____
Sat., June 26, 11:00 a.m. ____
Number of adult Members' tickets at \$4. ____
Number of Members' children's tickets at \$2 ____
Number of non-Members' adult tickets at \$5. ____
Number of non-Members' children's tickets at \$2.50 ____
Total amount enclosed: ____

Name: ____
Address: ____
City: ____ State: ____ Zip: ____
Daytime telephone: ____

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to: *Teddy's Quest*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192.

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Sun **Mon** **Tue** **Wed** **Thu** **Fri** **Sat**

June 1993

American Museum of Natural History

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 100 private foundations, 520,000 members, and numerous individual contributors.

3:40-7:00 p.m. Members' preview of Bears: *Imagination and Reality*. Free, and open only to Participating and Higher Members. Page 2

7:30 p.m. Bears Facts Members evening program Kaufmann Theater. Page 2

4 Bears *Imagination and Reality* opens in Gallery 77. Page 2.

5:11:00 a.m. NY Map Society Free. Room 319

1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6

3:00 p.m. Alien. Members' classic science-fiction film series. Kaufmann Theater. \$4 for Members, \$7 for non-Members. Page 2

6:1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6.

2:00 p.m. *American Indians: European Contact and the Doctrine of Discovery*. Kaufmann Theater. Free. Page 6

7

8:5:30-8:30 p.m. NY Harbor Sunset Cruise. Sponsored by Friends of Fishes. \$100 per person. Call (212) 289-3605 for ticket availability.

9:5:30-7:30 p.m. Rediscovering Stone Age Tools. A discussion and demonstration of flint-knapping techniques. \$35, and open only to Participating and Higher Members. Tickets required. Page 2.

10

11 The Dinosaurs of Jurassic Park opens in Gallery 3. Page 1.

7:00 p.m. The Science Behind Jurassic Park. Members' evening program. Kaufmann Theater. \$7, and open only to Participating and Higher Members. Page 1.

12:8:00 a.m.-2:00 p.m. Members' Saturday with the Bears. Page 2

1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6

13:1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6.

2:00 p.m. NY Shell Club. Free. Room 319

2:00 and 4:00 p.m. Contemporary Japanese Dance. Kaufmann Theater. Free. Page 6

4:00-9:00 p.m. Saltwater Fly Fishing. Page 7

14

15:7:00 p.m. Family Across the Sea. Kaufmann Theater. Free. Page 6

7:30 p.m. Limnæan Society. Blum Lecture Room. Free



20 Father's Day.

21

22:1:00 p.m. The Earth as a Peppercorn. Sign language tour. For information, call (212) 769-5566 (TTY users: 1-800-662-1220 relay)

2:30-4:00 p.m. Members' Walking Tour of Grand Central Terminal and Park Avenue. **SOLD OUT**

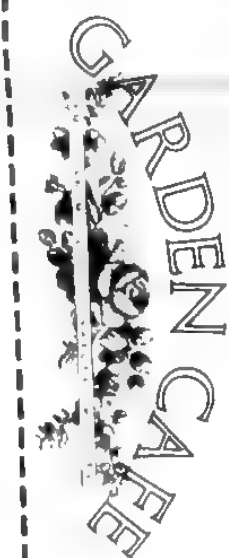
7:00 p.m. A Question of Color. Free. Page 6

How sweet it is.

Enjoy one of our fabulous desserts, for free, with every entree.

- Choose from our
Hot Belgian Waffle and Vanilla Ice Cream
with Dark Chocolate Sauce
Peanut Tart with Bourbon Whipped Cream
and Caramel Sauce
Creme Brûlée
Chocolate Mousse
Or Daily Special Selections
prepared by our Pastry Chef

- Free Dessert -
During the month of June, present this coupon for a free dessert with every purchase of an entree at the Garden Café. Limit: four desserts per coupon. Offer expires June 30, 1993



18:4:00 and 7:00 p.m. Members' Guided Bear Hunt. Free, and open only to Participating and Higher Members. Tickets required. Page 2. **SOLD OUT**

19

25:7:00 p.m. Remembering the Little Bighorn. Members' evening program. Kaufmann Theater. \$8 for Members, \$12 for non-Members. Page 2.

26:1:45 p.m. Sign language tour of Bears: *Imagination and Reality*. Free. For further information, call the Volunteer Office at (212) 769-5566 (TTY users: 1-800-662-1220 relay)

1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6

27:1:00-4:30 p.m. Leonhardt People Center events. Free. Page 6

2:00 and 4:00 p.m. Tribute to Our Ancestors. Kaufmann Theater. Free. Page 6

28

29

30



Join Members of the Department of Ichthyology on a Collecting Expedition to Gran Canaria

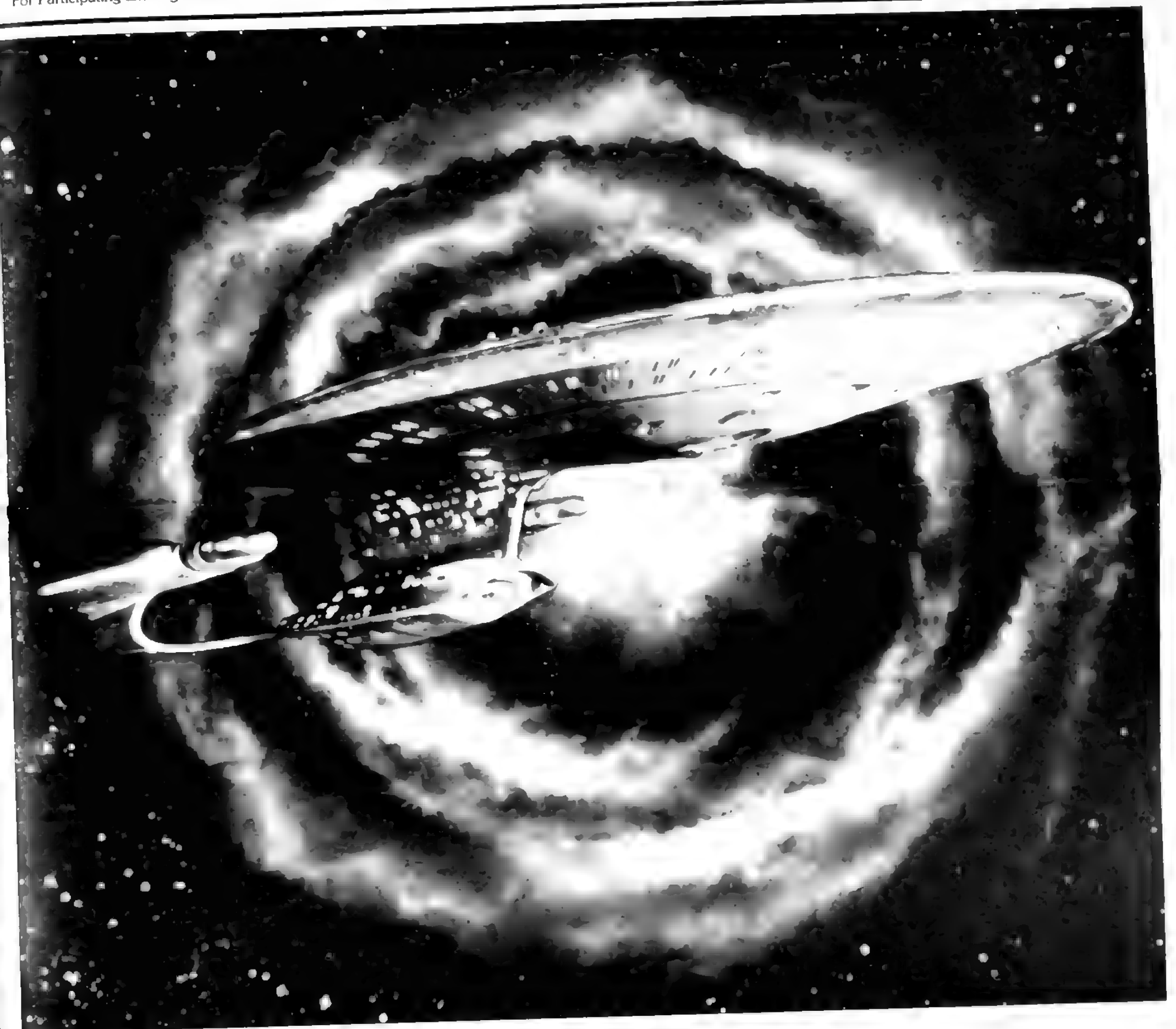
The Department of Ichthyology is organizing special research trips to the Canary Islands to collect fish and expand an artificial reef. The trip is open to divers and non-divers; divers will assist in expanding the reef by photographing fish, and collecting samples for the Museum's collection and non-divers will collect tidepool fishes and set fish traps for collecting other marine species. All participants will get a deep sea fishing trip.

To receive information about this trip and others sponsored by the Department of Ichthyology, write to: Friends of Fishes/AMNH, Department of Ichthyology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. For further information call (212) 289-3605 or fax (212) 360-6625.

ROTUNDA

Vol. 18, No. 7 July/August 1993

For Participating and Higher Members of the American Museum of Natural History



Orion Rendezvous. . . A Star Trek® Voyage of Discovery

Climb aboard the starship *Antares* for a cosmic journey. Actor LeVar Burton — alias Lieutenant Commander Geordi La Forge of *Star Trek: The Next Generation*® — narrates a thrilling new Sky Show that premieres on July 9 at the Hayden Planetarium.

Enter the twenty-fourth century and journey to a place where six suns blaze in the sky, then voyage to a sun 100 million times bigger than our

own. Explore where stars are born and the galactic graveyard of a star that died in one of the most powerful explosions in the universe. Space enthusiasts and *Star Trek*® fans alike will know that they have gone where no planetarium audience has gone before.

This Sky Show is presented in conjunction with a *Star Trek*® Retrospective at the Planetarium. Starfleet

uniforms, *Enterprise* models, alien costumes, and assorted props and photos from Paramount's original 1960s television series will be on display. This exhibition was curated by the National Air and Space Museum and explores the historical, political, social, and cultural issues and themes that were incorporated into the weekly series.

Showtimes for the Sky Show are

1:30 and 3:30 p.m. on Monday through Friday and 1:00, 2:00, 3:00 and 4:00 p.m. on Saturday and Sunday. Admission to the Sky Show for Participating and Higher Members is \$6 for adults and \$3.50 for children. Prices are subject to change without notification. For additional information about *Orion Rendezvous* and the *Star Trek*® Retrospective, call (212) 769-5100.

Summer Workshops for Kids

Young Members can join June Myles for a fun-filled week of workshops that will take place from Monday, August 9, through Friday, August 13. Tickets for the programs, which are geared toward children between the ages of 7 and 9, are \$15 for the Monday and Friday activities and \$30 for the mid-week events. The workshops are open only to Participating and Higher Members, and enrollment is limited to 20 participants. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Know Your Noses. Kids rove the Museum to seek creatures with oversized noses, learn how these animals use their jumbo proboscises, and create really "nosey" masks. **Monday, August 9, 10:30 a.m. - noon** *Jurassic Park, NYC.* After viewing Gallery 3's guest dinosaurs from Hollywood, participants will make some dinosaur models, see some authentic dinosaur fossils, and create some take-home fossils. **Tuesday, August 10 (sold out), and Thursday, August 19, 10:30 a.m. - 2:30 p.m.**

Birds Stats. Children will survey the Museum's displays of our feathered friends, make a bird mobile, and build a simple birdhouse. **Wednesday, August 11, 10:30 a.m. - 2:30 p.m.**

Bears. Participants will explore the special exhibition *Bears* and make their own bear hats. **Thursday, August 12, 10:30 a.m. - 2:30 p.m.**

Leaf Literacy. Kids explore the forest community and the trees inside and outside the Museum and make a "leaf sampler." **Friday, August 13, 10:30 a.m. - noon.**

Fantasy Dinosaurs of the Movies

A retrospective of prehistoric animals on film, *Fantasy Dinosaurs of the Movies* features clips from numerous motion pictures, including the early silent film *Gertie the Dinosaur* and other classics such as *One Million BC*, *King Kong*, *Gorgo*, and *Godzilla vs. the Smog Monster*. Host Donald Glut will

offer commentary on the clips and discuss film history and special-effects techniques.

The program will take place on Tuesday, July 20, at 7:00 p.m. in the Kaufmann Theater. Tickets are \$9 for Members and \$12 for non-Members; use the July/August Members' programs coupon on page 3 to register.

Members' Walking Tours

Historian Peter Laskowich will walk with Members around some of New York's landmark buildings and point out vestiges of the city's past.

On Wednesday, July 7, from 5:30 to 7:00 p.m. (sold out) and 3:00 to 4:30 p.m., *The Revolution and the New Na-*

tion in New York will observe some of Manhattan's remnants of the British occupation during the revolutionary era.

Chelsea: The New York of a Century Ago, on Tuesday, August 17, from 3:00 to 4:30 p.m. (sold out) and 5:30 to 7:00 p.m., looks at the area's

coal chutes, horse-walks, bootscrapers, and other relics of a bygone age.

Tickets for these tours are \$15 and available only to Participating and Higher Members ages 18 and up. Use the coupon on page 3 to register.

How Water Works

Tour of NYC's Water Supply and Pollution Control Systems

On Thursday, July 8, from 9:00 a.m. to 5:00 p.m., Members will tour the New York City water supply system. They'll visit the Ward's Island Pollution Control Plant and the Jerome Park Reservoir and Pilot Filtration Plant. They'll see part of the Third Water Tunnel in the Bronx, and they'll descend more than

200 feet below Van Cortlandt Park to observe the internal water works. The trip will conclude at Hillview Reservoir.

Representatives from the Department of Environmental Protection will be on hand at all of the sites to explain aspects of the system, and Sidney Horenstein, the

Museum's coordinator of environmental public programs, will lead the tours from start to finish.

Tickets are \$50 and available only to Participating and Higher Members ages 18 and up. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Deciphering the Human Skeleton

The analyses and limits of forensic anthropology are the focus of the Members' workshop *Deciphering the Human Skeleton*. Jeffrey Schwartz, professor of anthropology at the University of Pittsburgh and research associate in anthropology at

the American Museum, will discuss the extent to which information about an individual can be reconstructed when only the bones remain.

The workshop will take place on Wednesday, July 14, from 4:30 to 6:30 p.m. Tickets are \$40 and available only

to Participating and Higher Members ages 18 and up. Call the Membership Office at (212) 769-5606 for information about ticket availability. Enrollment in this workshop is limited, and a reading list will be provided upon registration.

Members' Day Trip to Kensico Dam and Reservoir

Sidney Horenstein, the Museum's coordinator of environmental public programs, will host a trip to Kensico Dam and Reservoir, where Members will learn about the ecology of reservoirs and Kensico's importance in the structure of the

water supply system. Participants will take a look at the dam's intake chambers and chlorinating plant, and they'll visit the water-testing lab to see how New York City's supply is monitored to ensure the high quality of its potable water.

The trip will take place on Thursday, July 15, from 9:00 a.m. to 5:00 p.m. Tickets are \$50 and available only to Participating and Higher Members ages 18 and up. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Clearwater Sail

Help hoist the sails on a replica of a vessel that linked communities on the Hudson River during the eighteenth and nineteenth centuries.

The crew will discuss the Hudson's ecology and the problems arising when ecological relationships are ignored. They'll show how the environment might be made cleaner, healthier, and more productive, and they'll illustrate life within the river with the vessel's nets and other equipment.

Sail dates are Thursday, July 22, and Wednesday, August 25, from 1:00 to

4:00 p.m. Tickets are \$36 and available only to Participating and Higher Members. Sailors must be at least 8 years old; children under that age will not be permitted aboard. Be sure your clothes are warm and casual (soft-soled, flat-heeled shoes are advised). This cruise is an environmental excursion, not a learn-how-to-sail trip. Because of the limited enrollment, participants are confined to four tickets per request.

Tickets are available only by mail order; use the coupon on page 5 to register.

Members' Whale Watch

Come aboard an Okeanos Ocean Research Foundation vessel to watch for whales and seabirds, sharks, turtles, and a variety of fishes. A naturalist will explain the range of whales and other sea creatures that may be encountered, and volunteers will be available throughout the cruise to answer questions.

The whale watch will take

place on Thursday, July 29 from 7:00 a.m. to 8:00 p.m. Members will travel by bus from the Museum to Montauk, where they'll cruise for 4½ hours. Tickets are \$75 and available only to Participating and Higher Members ages 13 and older. Call the Membership Office at (212) 769-5606 for information about ticket availability.

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 7
July/August 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Evelyn Robbins — Proofreader
Peter Zelaya — Fulfillment Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Printed by Waldon Press, Inc. New York

Operation Berkshire

Tuesday, July 27
7:00 p.m.
Kaufmann Theater
Free for Members,
\$8 for non-Members

A cooperative covert law enforcement effort, *Operation Berkshire* was enacted to curtail the illegal commercial sale of protected species of fish and wildlife. Members can hear about the operation, which uncovered a large criminal network trafficking in illegal venison and — of all things — gallbladders from black bears.

Colonel Wayne Brewer will discuss the undercover operation, a three-year project that's considered the largest and most successful operation of its kind ever conducted in the Northeast.



Evidence seized during Operation Berkshire

The assistant director of law enforcement for the New York State Department of Environmental Conservation, Brewer will describe the operation's dangers for the undercover officers, the lucrative market for bear gallbladders,

and the international scope of the traffic in illegal fish and wildlife. He'll also discuss the use of wildlife remedies in Asian cultures.

Use the July/August Members' programs coupon to register for the program

Stanford White's New York

Wednesday, September 8
7:00 p.m.
Kaufmann Theater
\$6 for Members, \$10 for non-Members

The work of architect and designer Stanford White (1853–1906) represents the peak of Beaux-Arts elegance in the New York of the late nineteenth century. The architect's life and career ended with his scandalous murder by millionaire Harry Thaw, who was deranged by his passion for Gibson Girl Evelyn Nesbit. White passed into popular legend when E. L. Doctorow adapted his story in the novel

Ragtime; the fatal triangle was also portrayed in the film *The Girl in the Red Velvet Swing*.

Architectural historian David Garrard Lowe will examine the influences, developments, and impact of White's masterpieces. Surviving examples include the Washington Square Arch; the second Madison Square Garden; the Metropolitan, Colony, and Players clubs;

the great mansions of Vanderbilt, Whitney, and Pulitzer; and scores of other edifices

After the program, Lowe will sign copies of his book *Stanford White's New York* (Doubleday), which will be available for purchase. Use the coupon at right to register for the program

Lowe will also lead a walking tour that looks at White's architectural wonders (see the related article below)

Members' Walking Tour

Beaux-Arts Buildings of New York

Discover some of the surviving vestiges of New York City's Beaux-Arts beauties on a walking tour that will spotlight the work of architect Stanford White. Historian David Garrard Lowe, who will present the Members' program *Stanford White's New York* (see the related feature above), will lead the tour.

Participants will meet at the Washington Square Arch and explore the Greenwich Village area, visiting White's birthplace, Judson Church, and buildings by White on Broadway.

Tours will take place on Sunday, September 12, at 11:00 a.m. and 1:00 p.m. Tickets are \$15 each and available only to Participating and Higher Members ages 16 and up. Use the coupon at right to register, and please note that tickets are available only by mail.

Beaux-Arts Buildings of New York. Sunday, September 12. \$15, and open only to Participating and Higher Members. Please indicate a first and second choice.
____ 11:00 a.m. ____ 1:00 p.m.

Number of tickets at \$15 (no more than 2, please) ____
Total amount enclosed: ____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Beaux-Arts Buildings*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

July/August Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *July/August Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Telephone reservations are not accepted. No refunds or exchanges.**

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

The Revolution in NY

Wednesday, July 7, 3:00 p.m.

Number of Members' tickets at \$15

(no more than 2, please): ____

Total amount enclosed for program: ____

Fantasy Dinosaurs of the Movies

Tuesday, July 20, 7:00 p.m.

Number of Members' tickets at \$9

Number of additional tickets at \$12

Total amount enclosed for program

Operation Berkshire. Tuesday, July 27, 7:00 p.m.

Number of free Members' tickets

(no more than 2, please): ____

Number of additional Members' tickets at \$5: ____

Number of non-Members' tickets at \$8: ____

Total amount enclosed for program

Chelsea. Tuesday, August 17, 5:30 p.m.

Number of Members' tickets at \$15

(no more than 2, please): ____

Total amount enclosed for program

Morocco. Wednesday, August 18, 8:00 p.m.

Number of Members' tickets at \$7: ____

Number of additional tickets at \$10

Total amount enclosed for program: ____

Woman of Power. Thursday, August 26, 7:00 p.m.

Number of free Members' tickets

(no more than 2, please): ____

Number of additional Members' tickets at \$5: ____

Number of non-Members' tickets at \$8: ____

Total amount enclosed for program

Biosphere. Wednesday, September 1, 7:00 p.m.

Number of Members' tickets at \$8

Number of additional tickets at \$12

Total amount enclosed for program

Stanford White's New York

Wednesday, September 8, 7:00 p.m.

Number of Members' tickets at \$6

Number of additional tickets at \$10: ____

Total amount enclosed for program

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

Biosphere 2: The Human Experiment

Wednesday, September 1

7:00 p.m.

Kaufmann Theater

\$8 for Members, \$12 for non-Members



Biosphere 2, the largest self-sustaining ecosystem ever constructed by humans

There's a Garden of Eden in the middle of the Arizona desert — three acres that encompass a rain forest, a miniature ocean with a coral reef, a marsh, and 3,800 plant and animal species, all enclosed within a huge glass dome. Biosphere 2 is the largest self-sustaining ecosystem ever constructed by humans. For the past two years eight scientists and engineers have been sealed inside the biosphere while they study its

"microhabitats." They've recycled their wastes and the ecosystems' natural resources in the hope of discovering better ways to manage the resources of Biosphere 1 — the earth itself.

John Allen, the vice president of Biospheric Development for Space Biospheres Ventures, will present the Members' program *Biosphere 2: The Human Experiment*. Allen has been involved with the project

since its inception in 1984, and his presentation will cover the history of biospheric design, current and future research projects at Biosphere 2, and implications for the future. The program will be illustrated with slides and augmented by a brief video showing recent views of the ecosystems inside Biosphere 2.

Use the July/August Members' programs coupon on page 3 to register.

Women's Equality Day Observance

Woman of Power

Thursday, August 26

7:00 p.m.

Kaufmann Theater

Free for Members, \$8 for non-Members

A day in the life of a Cherokee Nation leader is the focus of the documentary *Chief Wilma P. Mankiller: Woman of Power*. The first woman among the nation's 21 democratically elected chiefs, Mankiller heads a tribe of 113,000 — the largest group of Cherokee in rural Oklahoma. She oversees the nation's government, educational, medical, and judicial systems and is responsible for the first "self-government

project," which balances Cherokee culture with the modern world.

The half-hour video spotlights Mankiller's groundbreaking work in governance and community development in modern tribal life. "I would like most to be remembered," Mankiller says, "as someone who helped our people enter the twenty-first century on our own terms."

The program will be hosted by filmmaker Mary Scott,

who is an editor, lecturer, and successful lobbyist for women's issues. She has won awards for her direction and production of this documentary as well as for music and news videos. After the film, Scott will discuss the making of the documentary and answer questions from the audience.

Use the July/August Members' programs coupon on page 3 to register for the program.

Morocco and the Casbah Dance Experience

Wednesday, August 18

8:00 p.m.

Kaufmann Theater

\$7 for Members, \$10 for non-Members

The oldest continuing classical folk dance on earth, Raks Sharki, is among the entrancing numbers to be performed at a Members' evening of Middle Eastern and North African dance. Morocco and the Casbah Dance Experience will present a fascinating array of ethnic dance forms, ranging from demonstrations of balance and dexterity — such as those of the Moroccan Tea Tray Dance and Raks el As-saya, an Egyptian women's cane dance — to the mystical dance called Guedra, a trance dance of benediction and betrothal that originated with the so-called Blue People of the Sahara.

The Casbah Dance Experience is under the direction of its founder, Morocco, who is a leading performer and authority in her field. Her performing career includes appearances around the world, and she has spent more than 30 years trying to find, recover, preserve, and present the vanishing dance forms of the Middle East and North Africa. Morocco's extensive research is reflected by the troupe's repertoire and the Casbah Dance Experience is celebrated for the authenticity of its performances as well as its joyous entertainment.

Use the coupon on page 3 to register.



The Dinosaurs of Jurassic Park

The reptilian stars of Steven Spielberg's blockbuster movie *Jurassic Park* are currently on display in Gallery 3. Models of the dinosaurs that appear in the film, along with actual fossils of these creatures, are featured in the exhibition, which is jointly presented by the American Museum and the Dinosaur Society and was created by Research Casting International of Toronto.

Please note that due to the extraordinary expense of assembling and maintaining this exhibition, there will be an admission charge to Gallery 3. General admission is \$5 for adults and \$2.50 for children, and \$3 for senior citizens; Members' admission is \$4 for adults, \$2 for children. The Dinosaurs of Jurassic Park will be on display through September 12.

Members' Trip to Block Island

Friday, September 10–Saturday, September 11

Savor one of the last weekends of summer with a getaway to one of the Nature Conservancy's "last great places." A trip to the resourceful, independent farming and fishing community of Block Island will take visitors back to a simpler time. The spectacularly beautiful and secluded region has escaped the scourge of development (thanks to its residents' foresight, sacrifice, and hard work), and the island remains the unspoiled treasure it was a century ago.

Naturalists from the Okeanos Institute will accom-

pany Members on a natural history tour of the island that promises some exciting moments of birdwatching (Block Island lies along the flyway of many migratory species). Other tour highlights include the Maze — several miles of carefully cut paths that meander through pine forests and emerge on the cliffs at the northeast end of the island — and the abandoned North Light, which stands as a quiet sentinel at the island's northern end and is bordered by dunes that serve as a rookery for the local seagull population.

The trip begins at 7:00

p.m. on Friday, with bus transportation from the Museum to Montauk, where Members will spend the night. The next morning they'll cruise to the island. Participants will arrive back at the Museum at around 9:00 p.m. on Saturday. The trip is open only to Participating and Higher Members ages 18 and up. The fees — which include transportation, hotel accommodations, buffet breakfast, and island tour — are \$145 per person for single occupancy and \$195 for double occupancy. Use the coupon below to request further information.

Members' Adult-Child Workshop

USS Enterprise Retrofit

Sunday, September 19
10:30 a.m.–noon or 1:30–3:00 p.m.
\$26 per couple, and open only to Participating and Higher Members
Ages 7 and up

Trekkies, unite! June Myles is calling all intergenerational wannabe starship captains together in honor of the Planetarium's *Star Trek* Retrospective exhibition.

The mission: to build a model of the *Enterprise* or another futuristic spacecraft. No computerized engineering

plans or instruction manuals will be provided; however, a wealth of ordinary and unusual materials will be available for the enterprising Trekkie willing to navigate in the creativity sector.

This adult-child workshop is intended to allow the adult Trekkie to infiltrate the next

generation (or vice versa) and pass along valuable ancient forms of amusement. All starships will be beamed home.

To enter your position on our captain's log, use the coupon below. Note: indication of the presence of your adult-child team will be accepted only by mail

Members' Workshop

Understanding Geology

Wednesdays, September 22 and 29
5:30–7:30 p.m.

\$50, and open only to Participating and Higher Members
Ages 18 and up



Sidney Horenstein will show you how geologists determine the relative ages of rocks and how some of the moon's prominent features were formed. This two-part workshop will bring geological principles to life and make them easily understandable. Horenstein, the Museum's coordinator of environmental public programs and a geologist, will use commonplace items to demonstrate some

fundamentals of geology. Participants will work individually to create facsimiles of folded mountains, which result from continental collisions. They'll also make models of minerals that illustrate the crystal systems.

This is a hands-on workshop, so come prepared to roll up your sleeves. Use the coupon below to register, and please note that tickets are available only by mail.

Members' Weekend in Lancaster County

The Lost Dutchman Gemboree

Saturday, August 14–Sunday, August 15

A summer festival of minerals, fossils, gems, and jewelry, the Lost Dutchman Gemboree draws thousands of visitors to eastern Pennsylvania. Among its attractions are specimens for beginning or advanced collectors, fine-cut gems, custom-designed jewelry, jewelry repair and stone-setting booths, and many other items and services.

Members can visit the gemboree and pan for gold in a lovely stream that flows through the meadows and woods of Amish country. Gold was discovered during the first gemboree, and visitors have panned each year since. The gold flakes are small but fairly abundant, so chances of coming up with a showing of gold are good.

Participants will travel by bus from the Museum to the fairgrounds in Lebanon, Pennsylvania (the drive is approximately four hours). They'll spend the afternoon at the fair and in the evening they'll attend a workshop on gemstones at the Quality

Inn, where they'll spend the night. On Sunday, Members will pan for gold in the morning and return to the fairground, departing at 5:30 p.m.

Registration is limited to

Participating and Higher Members ages 13 and older. Fees are \$145 per person for single occupancy and \$195 per person for double occupancy. Use the coupon at right for further information.



Panning for gold

Membership Workshops and Weekends. Use this coupon to register for *Summer Workshops for Kids*, *Clear water Sail* (indicate first and second choice of dates), *USS Enterprise Retrofit* (indicate first and second choice of times), and *Understanding Geology*. To receive further information about the trips to Block Island and the Lost Dutchman Gemboree, please check the appropriate box.

Name(s) of program(s) _____

Number of tickets and price (please indicate which program if more than one): _____

Total amount enclosed _____

- ☐ Send me further information about the trip to Block Island
☐ Send me further information about the Lost Dutchman Gemboree

Name _____

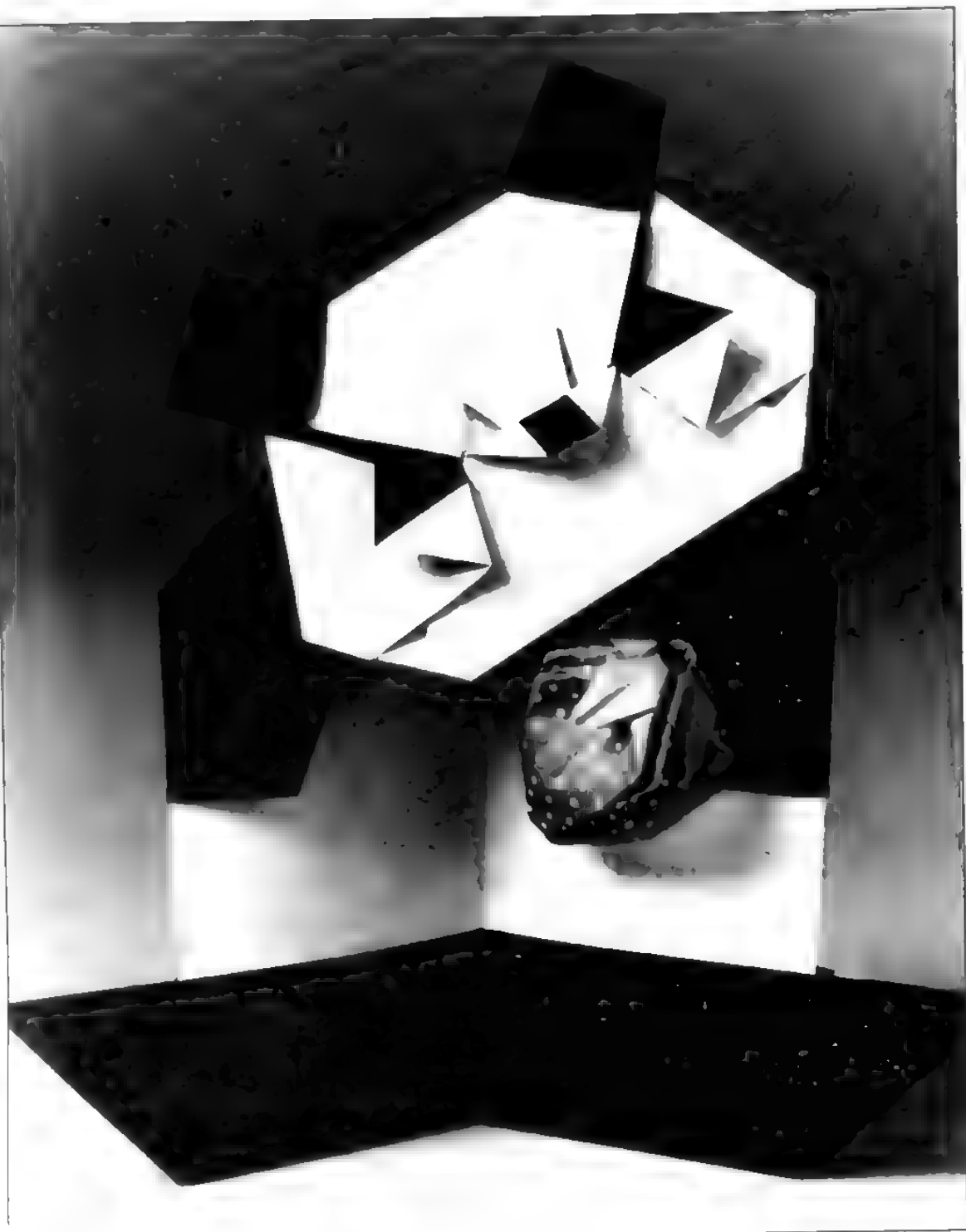
Address _____

City _____ State _____ Zip _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Workshops and Weekends*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192



Learn and Teach Origami

In these special classes for volunteers, origami specialist Michael Shall will instruct beginners in the art of folding. Students start with simple models like the swan, sail boat, and jumping frog and progress to more complicated models like the flapping bird and omega star.

The sessions will be conducted from 6:30 to 8:30

p.m. on six Wednesdays September 8, 22, and 29, October 6, 13, and 20. Please note that the classes are progressive; each lesson builds upon teachings from the previous class.

The classes are free, with all materials provided. In exchange, students are expected to repay the 12 class hours as origami volun-

teers, helping the Museum teach at the annual Origami Holiday Tree as well as the spring and summer origami tables. The teaching tables are staffed at all times during Museum hours in the holiday season, including weekends and evenings.

To register for the origami classes for volunteers, please call (212) 769-5566.

Summer Fun at the Origami Table

Museum visitors of all ages can take a break from the summer heat by joining the origami volunteers in the air conditioned Hall of Ocean

Life. The origami volunteers are back by popular demand, and they'll show visitors how to fold paper into sailboats, whales, and jumping frogs.

The volunteers will be on hand from Monday, August 2, through Sunday, August 15, from 11:00 a.m. to 3:00 p.m.

A Planet-Walk through the Solar System

The Earth as a Peppercorn

Sundays, July 18 and August 15
1:00 p.m.
Free

It's difficult to picture the dimensions of the solar system—the planets are relatively small and distances between them almost absurdly great. For a model whose scale is true to size and distance, it's necessary to step outside

The planet-walk is a 1,000 yard model of the solar system that was devised in 1969 by astronomer and teacher Guy Ottewill. The walk begins on the Planetarium's front steps at 81st Street, where volunteer tour leader

Robert Campanile will take participants on a journey of discovery that covers the universe.

For further information about the tours, call the Volunteer Office at (212) 769-5566.

Scuba Diving and Seining

Sunday, August 22

The Gulf Stream's eddies lead tropical fish into the shallows of local beaches by late summer, and these migrant fish survive only until the weather turns cold. Join staff members from the New York Aquarium and the Department of Ichthyology in observing and collecting these exotic fish on a Sunday cook-out at the beach.

The program is presented by Friends of Fishes, Pan Aqua, and the New York Aquarium for Wildlife Preservation. Tickets are \$99 for divers, \$60 for nondivers, and \$30 for children under 12. Proceeds from the event will benefit the Department of Ichthyology. Admission includes entrance to the aquarium and a tour, the use of collecting equipment (nets for

divers, seines for waders), fish identification help from the aquarium staff, barbecue and social, and a special membership in Friends of Fishes.

For reservations, call Friends of Fishes at (212) 289-3605 or fax (212) 360-6625. Divers must also pre-register at Pan Aqua at (212) 496-2267. Proof of certification is required, and the use of diving equipment is included in the fee.

Tickets can be ordered by mail. Make your check payable to Friends of Fishes AMNH, and mail with a self-addressed stamped envelope to: Friends of Fishes, Department of Ichthyology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Bears: Imagination and Reality



The popular images of bears — in myth, art, literature, and history — from prehistoric times to the present are contrasted with the reality of bears in nature in the new exhibition Bears: Imagination and Reality. Winnie the Pooh, Smokey the Bear, and an array of teddy bears are among the Gallery 77 exhibition's fanciful representations of the bears among us. Bears also depicts the less familiar black bears and grizzlies.

A Call to Teach

Each year thousands of schoolchildren visit the Museum. We need you as a teaching volunteer to answer their questions and add to their sense of wonder about the world. Teaching volunteers work with classes on

school day mornings. Previous teaching experience is not required; we will train you. The next teaching training program starts this fall.

Call the Museum's Volunteer Office at (212) 769-5566 for an application.

Celestial Fender-Bender

The Peekskill Meteorite

On October 9 of last year a Peekskill, New York, resident ventured outside after hearing a loud crash. A football-sized meteorite lay embedded in her driveway, having drilled its way through the trunk of her 1981 Chevy Malibu.

The meteorite was visible around most of the eastern United States, and since it occurred on a Friday night during the high school football season, several amateur and professional video photographers recorded the event. This footage offers scientists a rare opportunity to calculate the meteorite's orbit, perhaps to a known asteroid.

The car and the meteorite will be on display at the Museum in the 77th Street foyer, starting July 30.

Happenings at the Hayden

Sky Show

Orion Rendezvous...A Star Trek® Voyage of Discovery

See page 1 for details of the new Sky Show.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., July 10, at 10:30 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children for the July 10 show. Starting in August, admission to *Wonderful Sky* will be \$6 for adult Participating and Higher Members and \$3.50 for their children. Showtimes are Sat., Aug. 7, at 10:30 and 11:45 a.m.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO™ and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., July 10, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5100.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920 or (212) 769-5100.

Museum Notes

Hours

Exhibition Halls
Mon.-Thurs. & Sun.10:00 a.m.-5:45 p.m.
Fri. & Sat.10:00 a.m.-8:45 p.m.

The Museum Shop
Mon.-Thurs. & Sun.10:00 a.m.-5:45 p.m.
Fri. & Sat.10:00 a.m.-7:45 p.m.

The Junior Shop
Mon.-Fri.10:00 a.m.-4:45 p.m.
Sat. & Sun.10:00 a.m.-5:45 p.m.

The Museum Library
Tues.-Fri.11:00 a.m.-4:00 p.m.

Diner Saurus Fast Service Eatery
Daily11:00 a.m.-4:45 p.m.

Garden Cafe
Reservations: (212) 769-5865
Lunch: Mon.-Fri.11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.5:30-7:30 p.m.
Brunch: Sat. & Sun.11:00 a.m.-4:00 p.m.

Whale's Lair
Fri.3:00-8:00 p.m.
Sat.Noon-8:00 p.m.
Sun. & most holidaysNoon-5:00 p.m.

Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)
Sat. & Sun.11:00 a.m. 4:00 p.m.

The Discovery Room
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10
Children must be accompanied by an adult
Closed on holidays and weekdays
Sat. & Sun.Noon-4:30 p.m.

The Natural Science Center
For children of all ages and their families
Closed on Mondays and holidays
Tues.-Fri.10:30 a.m. - 12:30 p.m.
and 2:00-4:30 p.m.
Sat. & Sun.1:00-4:30 p.m.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax

The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth. Viewers will take a spectacular helicopter ride over towering glacial peaks and dive with the first humans to explore the crystalline caverns of the Chaos glacier. Antarctica depicts the natural history, delicate ecology, and awesome beauty of the earth's last great wilderness.

Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily. Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at 12:30, 2:30, and 4:30 p.m.

On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical Rain Forest. The Museum offers a dinner/theater package that includes admission, double feature, and dinner in the Garden Cafe. For reservations call (212) 769-5350.

Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members)
Adults: \$4 single feature; \$5.50 double feature
Children: \$2 single feature; \$3 double feature

Birthday Parties

Theme parties for young Members 5-10 years old are two hours long and held at 3:30 p.m. on Tuesday through Friday. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child. (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769-5606 for further information.



Librarian's Choice: Treasures from 124 Years of Collecting is on display in the Library Gallery

Parking

The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first come, first-served basis; fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from 9:30 a.m. to midnight on Friday and Saturday.

Hertz Manhattan, located one block away from the Museum at 210 West 77th Street (between Broadway and Amsterdam), offers parking discounts to Members: on Monday through Friday they receive a \$2 discount off regular prices and on Saturday and Sunday Members receive a \$3 discount.

Call the Membership Office at (212) 769 5606 for information about alternative parking.

Museum Tours

Free Museum Highlights Tours are available to individuals and families. Tours are conducted daily at 10:15 and 11:15 a.m., 1:15, 2:15, and 3:15 p.m. Free Spotlight Tours are also available to individuals and families.

Group Tours are available for a fee. All Group Tours must be scheduled through the Volunteer Office. For details, call (212) 769-5566.

Outreach Program

A member of the Volunteer Staff is available to present to your organization a free slide show that highlights the Museum's collections. Call the Volunteer Office at (212) 769-5566 for details.

A Fifth-Grade Special

Friends of Fishes has formed a new committee to educate children about the Hudson River and its fauna. The committee consists of student teachers who want to share their enthusiasm for science by giving fifth-graders hands-on experience. The program will explore the variety of fish in the Hudson River through informal discussion displays, and a petting tank.

The 90-minute sessions take place two Saturdays each month. The program is open to all fifth-graders and is limited to 16 per session. For further information call Heidi Michelsen, director of the Elementary Education Committee, at (212) 289-3605 or fax (212) 427 6659.

Phone Numbers

Museum information(212) 769 5100
Membership information (for questions about Museum events)(212) 769-5606
Participating Members' Customer Service (for questions and problems related to Rotunda and Natural History magazine — missed issues address changes, and other information)(800) 283-AMNH
Planetarium information(212) 769-5900
Education Department(212) 769-5310
Discovery Tours(212) 769-5700
.....toll-free outside NY State: (800) 462-8687
Naturemax(212) 769 5650
Development/Public Affairs(212) 769-5270
Volunteer Office(212) 769-5566
Museum Shop(212) 769-5150
Library Services(212) 769-5400
Natural History magazine(212) 769-5500
Members' Book Program(212) 769-5500

Sun Mon Tues Wed Thur Fri Sat

July 1993

American Museum of Natural History



4 Independence Day The Museum is open.

5



7 3:00-4:30 and 5:30-7:00 p.m. The Revolution and the New Nation in NY Members' walking tour Tickets required Page 2 The 5:30 tour is SOLD OUT.

8 9:00 a.m.-5:00 p.m. How Water Works Tour of NYC's Water Supply and Pollution Control Systems Members' tour Tickets required Page 2

9

10 11:00 a.m. NY Map Society Room 319 Free

11

12

13

14 4:30-6:30 p.m. Deciphering the Human Skeleton Members' workshop Tickets required Page 2

15 9:00 a.m.-5:00 p.m. Members' Day Trip to Kensico Dam and Reservoir Tickets required Page 2

16

17



18 1:00 p.m. The Earth as a Peppercorn A Planet Walk through the Solar System Reservations required Page 6

19

20 7:00 p.m. Fantasy Dinosaurs of the Movies Members' evening program Kaufmann Theater \$9 for Members, \$12 for non-Members Page 2 7:30 p.m. Linnaean Society of NY Blum Lecture Room Free

21

22 1:00-4:00 p.m. Clearwater Sail Members' family program Tickets required Page 2

25

26

27 7:00 p.m. Operation Berkshire Members' evening program Kaufmann Theater Free for Members, \$8 for non-Members Page 3

28

29 7:00 a.m.-8:00 p.m. Members' Whale Watch Tickets required Page 2

30

31 1:45 p.m. Ocean Life: The Life Within the Mysteries, and the Future Sign language tour of the Hall of Ocean Life This free tour begins in the second floor Rotunda. For further information, call the Volunteer Office at (212) 769-5566 (voice)

Sun Mon Tues Wed Thur Fri Sat

1

2

3

4

5

6

7

August 1993



9 10:30 a.m.-noon. Know Your Noses Members' children's workshop Tickets required Page 2

10 10:30-2:30 p.m. Jurassic Park, NYC Members' children's workshop Tickets required Page 2 SOLD OUT.

11 10:30 a.m.-2:30 p.m. Bird Stats Members' children's workshop Tickets required Page 2

12 10:30 a.m.-2:30 p.m. Bears Members' children's workshop Tickets required Page 2 7:30 p.m. Linnaean Society of NY Blum Lecture Room Free

13 10:30 a.m.-noon. Leaf Literacy Members' children's workshop Tickets required Page 2

14 Members' Weekend in Lancaster County The Lost Dutchman Gembores Page 4

15 1:00 p.m. The Earth as a Peppercorn A Planet Walk through the Solar System Reservations required Page 6

16

17 3:00 and 5:30 p.m. Chelsea The NY of a Century Ago Members' walking tour Tickets required Page 2 The 3:00 tour is SOLD OUT.

18 8:00 p.m. Mirocco and the Casbah Dance Experience Members' evening program Kaufmann Theater \$7 for Members \$10 for non-Members Page 4

19 10:30-2:30 p.m. Jurassic Park, NYC Members' children's workshop Tickets required Page 2

This summer, your group gets an even better deal.

Our group rates are always a great reason to come to the beautiful Garden Cafe. But, July through September, we have an even better deal. If your group is 20 people or more, we'll give you a 15% discount off our regular low group rates. What a great reason to enjoy our delicious summer menu amid the greenery of our garden setting. Call (212) 769-5865 for the details.



New and Improved

A variety of renovations are under way at the Museum. We are giving a new look to our dinosaurs, and while renovations are taking place access to some exhibition halls will be restricted. The halls of Earth History, Late and Early Mammals, and Late and Early Dinosaurs are closed until further notice.

Dinosaur devotees should stop by the Roosevelt Memorial Hall on the second floor for a look at the Barosaurus, the world's tallest freestanding dinosaur exhibit. The Gallery 3 exhibition The Dinosaurs of Jurassic Park features spectacular models of creatures appearing in the film Jurassic Park, along with actual fossils.

The Museum's newest exhibition hall, the Hall of Human Biology and Evolution, is open. The hall's exhibits are united by the theme of humanity's place in nature and are organized into three sections: an examination of human biology and anatomy by comparison with traits shared by other living creatures; depictions of the path of human evolution; and an exploration of the origins of human creativity.

25 1:00-4:00 p.m. Clearwater Sail Members' family program Tickets required Page 2

26 7:00 p.m. Woman of Power Members' evening program, presented in observance of Women's Equality Day Kaufmann Theater Free for Members, \$8 for non-Members Page 4

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 corporations, 100 private foundations, 520,000 members, and numerous individual contributors.

ROTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol. 18, No. 8, September 1993



Strange New Worlds: *Star Trek* and the Sixties

Thursday, September 23

7:00 p.m.

Kaufmann Theater

\$6 for Members, \$9 for non-Members

Even people who have never seen an episode of *Star Trek* are familiar with the expression "Beam me up, Scotty," and recognize Mr. Spock's pointy-eared head. Ever since its premiere in 1966, devotees around the world have followed the series, which projected the wonders of intergalactic travel in the twenty-third century with themes, values, concerns, and conflicts that emerged directly out of 1960s America.

Mary Henderson, curator of art at the National Air and Space Museum

has organized a major *Star Trek* retrospective exhibition that is now on display at the Hayden Planetarium (see page 15 for details). At the Members' program *Strange New Worlds: Star Trek and the Sixties*, she'll discuss the ways in which the series reflected contemporary issues such as civil rights, sexuality, and the search for utopia.

While the nation was wracked by the Vietnam War, economic crises, cultural upheaval, and urban and campus rebellions, *Star Trek* presented

an optimistic vision of the future in which these conflicts could be resolved. In fulfilling their mission to seek out new life and new civilizations, the *Enterprise* crewmembers were constantly challenged to overcome their prejudices as they interacted with aliens, making racial tolerance one of the show's ongoing themes.

The show's premise was based on a Cold War scenario. *Star Trek* characters operated in an uneasy state of suspended hostilities among the

United Federation of Planets and the Romulan and Klingon empires. The episode "A Private Little War," in which Captain Kirk attempts to establish a balance of power between a defenseless state and an aggressor, was television's first Vietnam parable. *Star Trek* again made television history with the medium's first interracial kiss, between Kirk and Uhura.

To register for *Strange New Worlds: Star Trek and the Sixties*, use the September Members' program coupon on page 3.

Stanford White's New York

Wednesday, September 8

7:00 p.m.

Kaufmann Theater

\$6 for Members, \$10 for non-Members

Architect and designer Stanford White was born in New York in 1853. He was murdered here in 1906 at the original Madison Square Garden, a building of his own design. White's creations embody the peak of Beaux-Arts elegance in the New York of the late nineteenth century, and in *Stanford White's New York* architectural historian David Garrard Lowe will examine the influ-

ences, developments, and impact of White's masterpieces.

Among White's other famous works are the Washington Memorial Arch in Washington Square, Judson Church, the Century and Metropolitan clubs, the Tiffany and Gorham buildings, and glorious mansions for the Pulitzers, Whitneys, and Vanderbilts. White was also a major designer of

country houses on Long Island and on the Hudson River.

After the program, Lowe will sign copies of his book *Stanford White's New York* (Doubleday), which will be available for purchase. Use the coupon on page 3 to register for the program.

Lowe will also lead a walking tour that looks at White's architectural wonders (see the related article below).

Members' Walking Tour

Beaux-Arts Buildings of New York

SOLD OUT from previous issue of *Rotunda*

Discover some of the surviving vestiges of New York City's Beaux-Arts beauties on a walking tour that will spotlight the work of architect Stanford White. Historian David Garrard Lowe, who will present the Members' program *Stanford White's New York* (see the related feature above), will lead the tour.

Participants will meet at the Washington Square Arch and explore the Greenwich Vil-



Judson Memorial Church in 1905

lage area, visiting White's birthplace, Judson Church, and buildings by White on Broadway.

Tours will take place on Sunday, September 12, at 11:00 a.m. and 1:00 p.m. Both tours are sold out.

Hudson River Cruise

Saturday, October 2

Noon-4:00 p.m.

\$50 for Members, \$60 for non-Members

Don't miss the fall colors! Spend an idyllic afternoon aboard a catamaran on a *Hudson River Cruise* and enjoy spectacular views of the Hudson Highlands' fall foliage. A pair of experts will be on hand to discuss fascinating aspects of the scenery.

Sidney Horenstein, the Mu-

seum's coordinator of environmental public programs, will point out the highlights of the landscape and aspects of geological interest. He'll provide the ongoing commentary with William Schuster, the director of the Black Rock Forest Consortium, who'll talk about local plant life and

the relationship of Black Rock Forest to the rest of the Hudson Highlands.

Participants will cruise up to West Point and back. Members should bring a bag lunch. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Members' Trip to Block Island

Friday, September 10-Saturday, September 11

Savor one of the last weekends of summer with a getaway to one of the Nature Conservancy's "last great places" — the resourceful, independent farming and fishing community of Block Island.

Naturalists from the Okeanos Institute will accompany Members on a natural history tour of the island that

promises some exciting moments of birdwatching (Block Island lies along the flyway of many migratory species).

The trip begins at 7:00 p.m. on Friday, with bus transportation from the Museum to Montauk, where Members will spend the night. The next morning they'll cruise to the island. Participants will arrive back at the Museum at around

9:00 p.m. on Saturday. The trip is open only to Participating and Higher Members ages 18 and up. The fees — which include transportation, hotel accommodations, buffet breakfast, and island tour — are \$195 per person for single occupancy and \$145 for double occupancy. Use the coupon on page 5 to request further information.

Members' Evening with James Donaldson

Ghosts of Cape Horn

and

Whales Weep Not

Tuesday, September 14

7:00 p.m.

Kaufmann Theater

Free for Members,

\$8 for non-Members

Two films that take viewers over the sea and under it are featured this month at the Museum: *Ghosts of Cape Horn*, an exciting tale of the American sailing ships that rounded the treacherous horn, and *Whales Weep Not*, a documentary that reveals the underwater world of the planet's largest toothed predator, the sperm whale. James Donaldson, producer and director of the films, will introduce them and answer questions afterward.

The power and struggle of sailing ships at sea are captured in *Ghosts of Cape Horn*, an in-depth view of the American square-riggers that battled their way around the horn. The 52-minute feature focuses on actual ships and crews that made the hazardous 18,000-mile voyage from the docks of New York to San Francisco by way of Cape Horn, an area considered the worst corner of the ocean world.

Ghosts is highlighted by actual footage taken by Alan Villiers and Captain Irving Johnson aboard square-riggers in the 1920s. In addition,

the film incorporates archival stills and recent action footage that dramatizes the struggles of these tall ships. Together, these elements provide a somber, mysterious look at this part of maritime history.

Whales Weep Not concentrates on a research project sponsored by the World Wildlife Fund in Sri Lanka's Indian Ocean Whale Sanctuary. The film follows a dedicated team of researchers as they document the social behavior and population dynamics of the sperm whale, immortalized in Melville's *Moby-Dick* as a symbol of man's attempt to conquer nature.

Author Richard Ellis called *Whales Weep Not* "a film of unqualified excellence. The world will know more about sperm whales when the film is shown than all the novelists and whalers — yes, and even the writers and painters of whalers — could ever tell." The film is 25 minutes long.

Don't miss this special Members' evening. Use the coupon on page 3 to register.

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 8
September 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Peter Zelaya — Fulfillment Coordinator
Risa Miller — Program Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to: *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Printed by Waldon Press, Inc. New York

From Parlor to Politics

Thursday, September 30
7:00 p.m., Kaufmann Theater
\$6 for Members, \$9 for non-Members

Millions of American women from different backgrounds entered reform movements and politics during the tumultuous period between 1890 and 1925 known as the Progressive Era. Excluded from formal political power (most women could not vote or hold public office before 1920), they formed national organizations to address the country's growing social problems — unregulated industrial expansion, rapid urban growth, rising immigration, and increasing barriers between races and between classes.

Historian Edith Mayo will discuss the emergence of women into public life. She'll

show how the entry of women into politics placed family concerns at the center of the reform agenda and shaped legislation and social policies of the twentieth century. Women organized to promote temperance and labor reform, abolish child labor and develop kindergartens and playgrounds, and improve public health. The profession of social work began with community centers like Jane Addams' Hull House in Chicago, where immigrants and the poor found social services.

Mayo has been a staff member of the Smithsonian's National Museum of American History for over 20 years.



Edith, 5 years old, worked all day in a Texas cottonfield in 1913

A curator in the museum's division of Political History, she coordinated *From Parlor to Politics*, a permanent exhibition at the museum.

Use the coupon at right to register

Behind-the-Scenes Tours of the

Department of Herpetology and Ichthyology

Saturday, October 30, and Thursday, November 4
\$12, and open only to Participating and Higher Members
Ages 13 and up

Cold-blooded creatures with backbones are the focus of the Members' upcoming behind-the-scenes tours at the Museum. The tours will visit one of the world's preeminent research centers for a look at the fishes, amphibians, and reptiles in the Department of Herpetology and Ichthyology.

Members will visit the department's collection areas and labs, which are never open to the general public, to see and hear about ongoing research in systematics and evolution — information that is used for conservation ef-



forts around the world. The department develops and maintains a collection of whole preserved specimens, bones prepared as skeletons, and tissues frozen for biochemical study or prepared for light and electron-microscope study.

Scientists from the department will be on hand to describe how specimens are gathered in the field and prepared for the collections. They'll talk about their use of dermestid beetles in cleaning skeletons and the value of preserving specimens in alcohol. They'll explain the methods by which animals are cleared and stained and allow Members to take a close-up look at some specimens through microscopes. Live fish will be on display, and the scientists will discuss some of their studies of cichlid behavior.

The tours last about one hour. Use the coupon at left to register, and please note that tickets are available only by mail.

Behind-the-Scenes Tours of the Department of Herpetology and Ichthyology. \$12, and open only to Participating and Higher Members. Tours will leave at 15-minute intervals and last about an hour. We will send you confirmation by mail indicating the exact time your tour will start. Please indicate a first, second, and third choice.

- ___ Saturday, October 30, between 10:30 a.m. and noon
- ___ Saturday, October 30, between 1:15 and 2:30 p.m.
- ___ Thursday, November 4, between 5:00 and 5:45 p.m.
- ___ Thursday, November 4, between 6:30 and 7:30 p.m.

Number of tickets at \$12 each: ___
Total amount enclosed for program: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Behind the Scenes*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

September Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: ___
Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to *September Members' Programs*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 5192. **Telephone reservations are not accepted. No refunds or exchanges.**

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

Stanford White's New York

Wednesday, September 8, 7:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$10: ___
Total amount enclosed for program: ___

Ghosts of Cape Horn and Whales Weep Not

Tuesday, September 14, 7:00 p.m.
Number of free Members' tickets (no more than 2, please): ___
Number of additional Members' tickets at \$5: ___
Number of non-Members' tickets at \$8: ___
Total amount enclosed for program: ___

Strange New Worlds: Star Trek and the Sixties

Thursday, September 23, 7:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$9: ___
Total amount enclosed for program: ___

From Parlor to Politics

Thursday, September 30, 7:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$9: ___
Total amount enclosed for program: ___

DNA Analysis. Thursday, October 14, 7:00 p.m.

Number of free Members' tickets (no more than 2, please): ___
Number of additional Members' tickets at \$5: ___
Number of non-Members' tickets at \$8: ___
Total amount enclosed for program: ___

Members' private viewing of Antarctica

Wednesday, October 20, 7:30 p.m.
Number of Members' tickets at \$5: ___
Total amount enclosed for program: ___

War of the Worlds

Saturday, October 23, 4:00 p.m.
Number of Members' tickets at \$6: ___
Number of additional tickets at \$9: ___
Total amount enclosed for program: ___

Forbidden Journey. Sunday, October 24, 3:00 p.m.

Number of Members' tickets at \$6: ___
Number of additional tickets at \$9: ___
Total amount enclosed for program: ___

Ghost Stories. Friday, October 29

Family program, 6:00 p.m.
Number of Members' tickets at \$5: ___
Number of additional tickets at \$8: ___
Total amount enclosed for program: ___
Adults' program, 8:00 p.m.
Number of Members' tickets at \$8: ___
Number of additional tickets at \$12: ___
Total amount enclosed for program: ___

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

Members' Rug-Hooking Workshops

Two Fridays, October 15 and 22

6:30–8:00 p.m.

\$40, and open only to Participating and Higher Members
Ages 16 and up

This is the Year of the American Craft, and here is your chance to get hooked on a new hobby. June Myles will introduce you to an ideal winter pastime that will provide hours of quiet amusement and help you weed out your closets.

Most nineteenth-century settlers in the New World couldn't afford to import carpets from their homelands, so they turned to the materials at hand — old feedsacks and worn out cloths. They cut

woven woolens into strips, which they hooked through a burlap backing according to patterns drawn with charcoal. The primitive designs usually reflected their surroundings — barnyard animals, the homestead, and family pets. Some of these handmade coverings for drafty floors became family heirlooms, and others are collectors' items of the 1990s.

At this two-part workshop you'll start with a very small project, and we'll provide all

the materials (except the scissors) to complete it. In the first session you'll learn the hooking basics, and the following week you'll learn a variety of techniques to finish the piece. (Ideally, you'll find some time to hook in between.) Then you'll be ready to create one-of-a-kind pieces on your own, from pillows to room-sized rugs.

Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Forbidden Journey

The Life of Alexandra David-Neel

Sunday, October 24

3:00 p.m.

Kaufmann Theater

\$6 for Members, \$9 for non-Members



David-Neel in a shrine room

Forbidden Journey: The Life of Alexandra David-Neel will profile the adventures and accomplishments of an extraordinary woman. A compulsive traveler, an explorer, an opera singer, a feminist, and an internationally acclaimed writer, David-Neel is perhaps best known for her 1924 expedition into the closed holy city of Lhasa, Tibet. She was the first foreign woman ever to enter the mystical capital.

David-Neel entered the forbidden city disguised as a beggar, one of her many transformations from a middle-class Parisian. She wrote 25 books on Eastern themes that have been translated into many languages, and her *My Journey to Lhasa* and *Magic*

and *Mystery in Tibet*, published in the 1930s, are still in print.

Barbara Foster, an assistant professor at Hunter College and her husband, Michael Foster, will present a fascinating account of David-Neel's 101 years of adventure, honor, intrigue, and fame. The Fosters are the authors of *Forbidden Journey* (Harper/San Francisco, 1989), a biography of David-Neel, and their presentation will coincide with the 125th anniversary of the birth of the woman Lawrence Durrell termed "the most astonishing Frenchwoman of her time."

Use the September Members' programs coupon on page 3 to register for the program.

Members' Day Trip to

Hawk Mountain

Saturday, October 16

7:00 a.m.–7:00 p.m.

\$60, and open only to Participating and Higher Members
Ages 13 and up

Members can enjoy an autumn day of birdwatching at Pennsylvania's Hawk Mountain, a spur of the Kittatinny Ridge in the eastern Appalachians. After leaving their breeding grounds in Canada and the northern states, thousands of migrating hawks and other birds of prey pass through Hawk Mountain Sanctuary, where they're admired by flocks of bird watchers.

Naturalist Stephen C. Quinn, a Museum authority on birds and birdwatching, will accompany Members (see page 13 for details of Quinn's weekly field classes in Central Park). He'll join Members on a hike around the mountain to look for raptors, and while lunching on the mountain's north lookout, they'll watch for migrating birds of prey.

Transportation is by bus; the drive is about three hours each way. Be sure to wear proper clothing for the outdoors, including hiking boots or sneakers, and don't forget to bring binoculars and a bag lunch (there are no refreshments for sale at the sanctuary).

Use the coupon on page 5 to register, and please note that tickets are available only by mail.



Members' Workshop

Understanding Geology

Wednesdays, September 22 and 29

5:30–7:30 p.m.

\$50, and open only to
Participating and Higher Members
Ages 18 and up

Sidney Horenstein will show you how geologists determine the relative ages of rocks and how some of the moon's prominent features were formed. This two-part workshop will bring geological principles to life and make them easily understandable.

Horenstein, the Museum's coordinator of environmental public programs and a geologist, will use commonplace items to demonstrate some

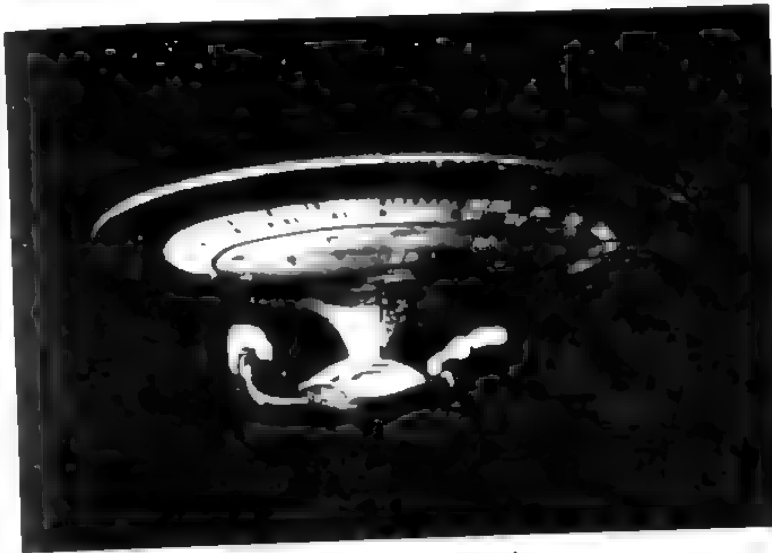
fundamentals of geology. Participants will work individually to create facsimiles of folded mountains, which result from continental collisions. They'll also make models of minerals that illustrate crystal systems.

This is a hands-on workshop, so come prepared to roll up your sleeves. Use the coupon on page 5 to register and please note that tickets are available only by mail.

Members' Adult-Child Workshop

USS Enterprise Retrofit

Sunday, September 19
10:30 a.m.-noon or 1:30-3:00 p.m.
\$26 per couple, and open only to
Participating and Higher Members
Ages 7 and up



The USS Enterprise

Trekkies, unite! June Myles is calling all intergenerational wannabe starship captains together in honor of the Planetarium's *Star Trek* retrospective exhibition (see page 15).

The mission: to build a model of the *Enterprise* or another futuristic spacecraft. No computerized engineering plans or instruction manuals will be provided; however, a wealth of ordinary and unusual materials will be avail-

able for the enterprising Trekkie willing to navigate in the creativity sector.

This adult-child workshop is intended to allow the adult Trekkie to infiltrate the next generation (or vice versa). Of course, all starships will be beamed home.

To enter your position on our captain's log, use the coupon below. Note: indication of the presence of your adult-child team will be accepted only by mail.

Membership Workshops and Tours. Use this coupon to register for *Hudson Cruise*, *Understanding Geology*, *Hawk Mountain*, *Rug Hooking*, and *USS Enterprise Retrofit* (indicate first and second choice of times). To receive further information about the trip to Block Island, please check the appropriate box.

Name(s) of program(s): _____

Number of tickets and price (please indicate which program if more than one): _____

Total amount enclosed: _____
☐ Send me further information about the trip to Block Island

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Workshops and Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

Ghost Stories

Friday, October 29
Kaufmann Theater
Family program (ages 5-12): 6:00 p.m.
\$5 for Members, \$8 for non-Members
Adults' program: 8:00 p.m.
\$8 for Members, \$12 for non-Members

Legends, myths, and true-life adventures are the fabric from which storyteller Laura Simms weaves her tales of enchantment. She's been among the Museum's most popular performers since 1968, and her Halloween shows are a longstanding Museum tradition.

One of America's foremost

performers and students of world folklore, Simms has been hailed as a major force in the renaissance of story telling in the United States. She has developed a vast repertoire of traditional tales from Africa, Asia, Europe and the Americas, many of which she heard from Tibetan Buddhist lamas, Maori elders

and Native American story tellers as well as classical and modern Western theater artists. Through careful adaptation and interpretation, Simms conveys the timeless beauty and meaning of these stories to contemporary audiences.

Use the coupon on page 3 to register for the programs

Biosphere 2: The Human Experiment

Wednesday, September 1
7:00 p.m.
Kaufmann Theater
\$8 for Members,
\$12 for non-Members

There's a Garden of Eden in the middle of the Arizona desert — three acres that encompass a rain forest, a miniature ocean with a coral reef, a marsh, and 3,800 plant and animal species, all enclosed within a huge glass dome. Biosphere 2 is the largest self-sustaining ecosystem ever constructed by humans. For the past two years eight scientists and engineers have been sealed inside the biosphere while they study its "microhabitats." They've recycled their wastes and the ecosystems' natural resources in the hope of discovering better ways to manage the resources of Biosphere 1 — the earth itself.

John Allen, the vice president of Biospheric Development for Space Biospheres



Ventures, will present the Members program *Biosphere 2: The Human Experiment*. Allen has been involved with the project since its inception in 1984, and his presentation will cover the history of biospheric design, current and future research projects at

Biosphere 2, and implications for the future. The program will be illustrated with slides and augmented by a brief video showing recent views of the ecosystems inside Biosphere 2.

Call the Membership Office at (212) 769-5606 for ticket availability.

War of the Worlds

On Saturday, October 23, at 4:00 p.m., there will be a special showing of *War of the Worlds*, a 1953 film based on H. G. Wells' classic science-fiction fantasy.

The screening will be hosted by Brian Sullivan, the Planetarium's designer of special effects, who will introduce the film and answer questions afterward. The 85-minute film will be shown in the Linder Theater. Tickets are \$6 for Members and \$9 for non-Members; use the September Members' programs coupon on page 3 to register.



Insect in Amber

The Teachings of a Tiny Mummy

On Thursday, October 14, assistant curator Ward Wheeler will present the Members' program DNA Analysis, at which he'll discuss his work in the Museum's Molecular Systematics Laboratory. The program will take place at 7:00 p.m. in the Kaufmann Theater. Tickets are free for Participating and Higher Members and \$8 for non-Members. Use the September Members' programs coupon on page 3 to register.

In the story of *Jurassic Park* scientists clone dinosaurs from DNA found in the gut of a prehistoric blood-sucking fly encased in amber. It's an unlikely scenario, however, prehistoric DNA has been replicated right here in the Museum. It derives not from a dinosaur, but from a tiny mummy between 20 and 30 million years old — the extinct termite *Mastotermes electrodominicus*.

Like the donor mosquito of *Jurassic Park*, the Museum's termite was found in amber. It was studied through the interdisciplinary team efforts of Rob DeSalle, John Gatesy, Ward Wheeler, and David Grimaldi, who built on the previous work of Museum scientists Jim Carpenter and his colleague Barbara Thorne. All share an interest in the phylogenetic relationships among termites and the other insect groups, particularly cockroaches.

The *Mastotermes* genus of termites once had many widespread representatives; today, the only living species, *M. darwiniensis*, dwells in northern Australia. There it does quite well for itself. According to Wheeler, "In the parts of Australia where they live, the telephone poles have to be made of cement. They will eat anything else."

What makes a termite a termite? Grimaldi explains that all termites are eusocial, a term denoting division of both labor and castes. "There are workers, reproductives, soldiers, and a queen. They construct nests. They usually have highly reduced wing veins. They digest cellulose. They shed their wings. They're very highly reduced morphologically, having lost many characters. In fact, that's one thing that's made it difficult to place who their closest relatives are among the insects. Are they cockroaches? Are they praying mantises?"

Until fairly recently, *Mastotermes* was thought to be a missing link between termites and cockroaches — a sort of "specialized cockroach." On the other side of the evolutionary fence, members of the cockroach group *Cryptocercus* were thought of as "primitive termites." That relationship was challenged by entomologists Carpenter and Thorne even before DNA analysis.

"There was this notion for some time that termites were just social cockroaches," says Carpenter. "Within termites, *Mastotermes* was supposed to be the most primitive. In some superficial ways it looks kind of like a cockroach. For example, a cockroach has an expanded plate called a pronotum that covers its head. Well, *Mastotermes*' pronotum doesn't cover its head, but it's more expanded than any other termite's."

Grimaldi points out other morphological and behavioral similarities. "*Mastotermes*' eggs are laid glued together, looking sort of like an ootheca, or an egg pod, of the type that cockroaches have," he says. "Also, there are certain types of cockroaches that are primitively social and digest cellulose much as termites do." Both *Mastotermes* and *Cryptocercus* have gut endosymbionts (in this case, a variety of protozoa) that help them digest cellulose.

Carpenter points out that there are thousands of cockroach species. Some are quite beautiful, and many are outdoor dwellers that never venture into a kitchen or bathroom. The genus *Cryptocercus* contains at least two species that are found in North

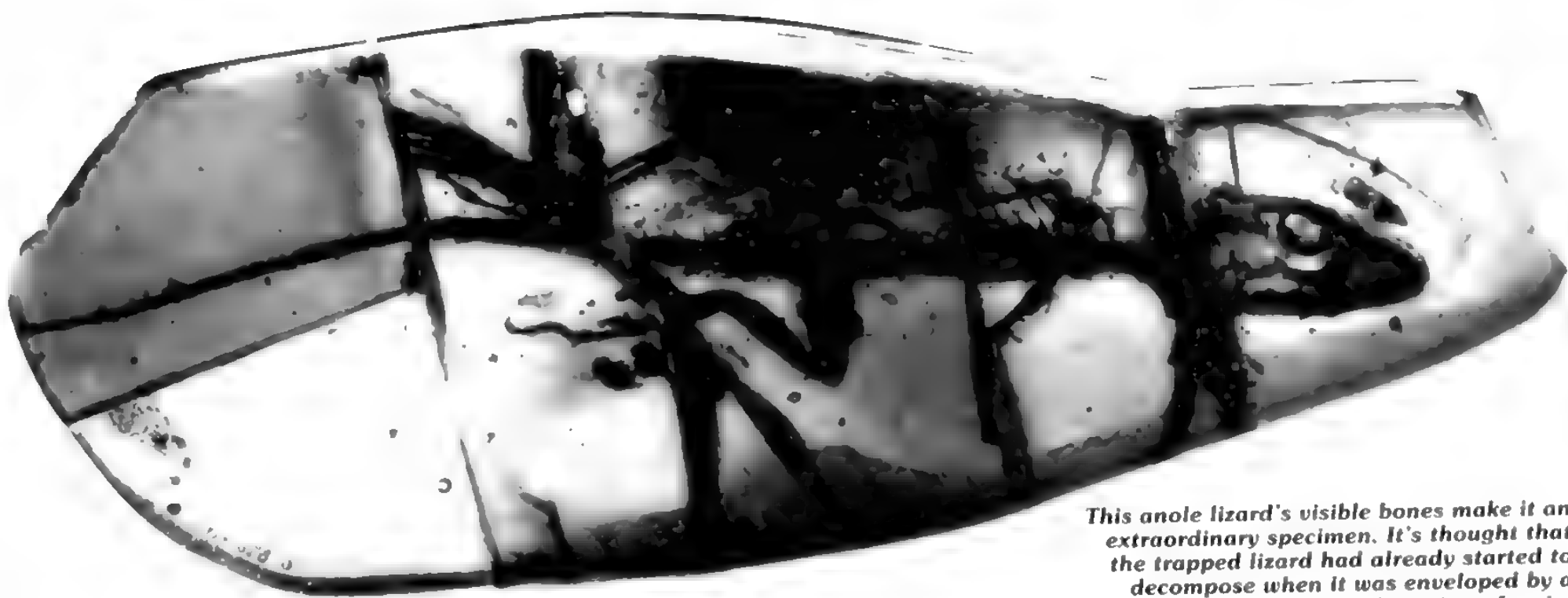
America. "Its behavior is largely what people think make it transitional to termites," says Carpenter. "It's colonial and it lives in wood. You can go out and find it, say, in Pennsylvania, in dead logs."

Both Carpenter and Grimaldi feel uncomfortable with the use of such superficial features to compare groups or classify insects within a group. For example, while *Cryptocercus* might be a colonial, living mastotermitids — as all living termites — are far more advanced in their social organization than any cockroach. And not all of *M. darwiniensis*'s features are truly "primitive" among its fellow termites.

"We showed that there are many traits belonging to *Mastotermes* that are not basal among termites," says Carpenter. "For instance, there is cooperative foraging by the worker members of a colony. It entails all sorts of collaboration and communication among colony members, information on where you're going and how to get back — this is not at all a primitive trait. In some morphological features they appear to be primitive, but it doesn't follow that they are ancestral in any other traits. They've got some morphological features that are less primitive than those of other termites."



A native of Australia, this male wood gnat was found in the Dominican Republic. It is about 25 million years old, as is the specimen on page 7.



This anole lizard's visible bones make it an extraordinary specimen. It's thought that the trapped lizard had already started to decompose when it was enveloped by a second coating of resin.

Grimaldi, too, wondered about relationships among termite species. "One of the questions I had was whether all of the species classified in the *Mastotermes* genus are really closely related. I suspected they might not be, because classically the genus has been defined on the basis of primitive characters that evolved long before *Mastotermes* ever evolved — things like the large anal lobe on the hind wing. That's something that cockroaches, praying mantises, and grasshoppers have, but most termites have lost it. It's like classifying humans on the basis of hair — it evolved long before humans ever evolved."

Grimaldi suspected that since many of the identifying characteristics used to define the genus were so generalized, *Mastotermes* was being used as a "taxonomic dumping ground."

Taxonomists have always used morphology and behavior as primary tools of classification; today, genetics plays an increasingly important role. In this case, the Museum had in its vast collection an insect so well preserved in Dominican amber that parts of its DNA could be sequenced, copied, and studied.

Grimaldi, the Museum's amber specialist, says there are many misconceptions about amber. "Many people think it's a gemstone, but it's an organic substance — fossilized resin. People often associate it with pine trees, but it's produced by a variety of plants, including conifers and angiosperms. The material from the Dominican Republic comes from an extinct species of the genus *Hymenaea*, which was a large canopy legume tree."

Grimaldi explains that there are hundreds of amber deposits throughout the world. They vary in age from about 300 million years of age to "fairly recent — just thousands of years old. The oldest amber that we have with insects in it is from Lebanon. It's Lower Cretaceous, about 135 million years old."

Sometimes Grimaldi and other Museum scientists go to the amber mines and deposits to augment the Museum's collection. More often, however, the Museum buys amber from a network of contacts in different areas of the world. "When they see something interesting they contact me," says Grimaldi. "You have to pay for these pieces. We're fortunate in having a very generous patron for amber — Museum Trustee Robert Goelet — and we have a beautiful collection here largely due to his support."

How are these fossils formed? According to Grimaldi, resin flows from a tree when it is injured, and small organisms become trapped in it. "You get flowers, moss, fragments of ferns, myriad insects, spiders, and mites — you even get some tiny vertebrates such as lizards and frogs."

"One big question is why there is so much amber. When you slash a *hymenaea* tree's trunk it bleeds resin. But this doesn't account for the massive amounts of amber we find. What I think happened is that a hurricane trashed a *hymenaea* forest millions of years ago — the trees bled incredible amounts of resin and populations in that forest became mired."

"Most ambers almost float in seawater. In fact, if you go to the Dominican Republic, you find the amber mines high and dry several thousand feet up in the mountains, but they're in marine sediments."

Grimaldi envisions high tides from a hurricane covering the deposits of resin with sediment. Amber forms as uplift occurs. Plates slide against each other, mountains are formed, and 25 million years later an insect yields its ancient genetic strands.

How can DNA remain intact to the point where it can be studied after millions of years? "Amber contains terpenes and isoprenes, which are substances that help preserve anything that becomes mired in the flowing, sticky resin. Amber has bactericidal properties. It also dehydrates materials, and it's the dehydration that actually preserves and embalms the DNA."

In fact, the Egyptians knew about the desiccating properties of amber, and they used it to help preserve mummies. "They ground it up and impregnated the burial gauze. They also stuck it into the cadavers."

"Not everything that gets stuck in amber becomes mummified," Grimaldi points out. "Very often you crack open a piece and the insect within is just a husk, with no tissue inside. Perhaps 80 percent of the specimens are like that."

Fortunately for our scientists, the extinct *Mastotermes electrodominicus* was in good enough condition for its DNA to be extracted and studied.

"Getting DNA from an amber specimen required a high degree of technology and a huge amount of work," according to Wheeler. He, along with DeSalle and Gatesy, was involved in the genetic phase of the research. "Instead of taking two days to go from organism to sequence [as it might for a recent specimen], it took us six months. There is not very much DNA, it's of very poor quality, and it's prone to contamination. We had to do many checks and controls."

Although the isolation and replication of genetic materials is quite technical and complicated, Wheeler describes it in general terms. "The basic way one isolates DNA is through its insolubility in ethanol. You take the specimen, crush it, and add a chemical that will lyse [break up] all the cells. Then you want to get rid of everything else that is also insoluble in ethanol. So we use a series of enzymatic and purification steps to take out other things. The final step is to add ethanol to the solution with some salts, and the DNA comes out of solution."

The scientists had only portions of the termite's DNA to work with. Of this material, they chose a target sequence thought to be diagnostic for determining relationships between and within groups. This sequence was then replicated both within living organisms and in a device called a PCR (polymerase chain reaction) machine.

"We actually take the DNA and put it into a plasmid [a tiny, self-reproducing piece of organic material], which is in turn put into a bacterium. When the bacterium reproduces, the plasmid is replicated along with it. Later we can isolate the plasmid DNA, reextract it, and sequence it."

The PCR machine replicates DNA mechanically. Wheeler describes it as "basically an elaborate heating and cooling block system. In the presence of a special enzyme that is stable under high temperatures, the DNA is alternately melted into its strands and new strands are synthesized. That is done over and over again. It's sort of like 'give a man a penny and double it every day, and eventually he's a millionaire.' You're mimicking replication in the cell with a piece of equipment."

The conclusion drawn after a comparison of sequences with those of many other insect species: Termites are indeed a unique group. Cockroaches and mantids are more closely related to each other than they are to termites. Additionally, *Mastotermes electrodominicus* (the mummy) and *Mastotermes darwiniensis* (the voracious eater of Australian telephone poles) are closer to each other than to other termites, and are most definitely termites. According to Wheeler, these studies "have placed a nail in the coffin of the old theory that termites are specialized cockroaches."

Now that ancient strands of DNA can be replicated, can an entire insect — or a dinosaur — be uncovered?

Grimaldi notes that in *Jurassic Park* dinosaur DNA is extracted from the gut of a blood-sucking insect. "In the thousands and thousands of specimens of insects in amber that I've looked at," he says, "I've never found a blood-sucking insect that was replete with blood. We have dozens of mosquitoes and no-see-ums, we even have a few ticks, sand flies, horseflies — all these groups suck blood, and not one of them has blood in it. The ticks are all flat, and the mosquitoes are skinny."

Another problem, says Grimaldi, is "you're not only dealing with minuscule amounts of tissue, but the blood should be at least partly digested."

Wheeler calls the chances of cloning an entire individual "vanishingly small. The pieces of DNA we isolated were tiny — just a couple of hundred base pairs, not the ten to the ninth or more base pairs that are actually involved in the creation of an organism. That's one thing. The other thing is that it's very important to have these pieces organized. The order of the genes is very important. You can't just put them together in a long string and see what happens. We have no knowledge of how the chromosomes are structured in these creatures."

"A chromosome," Wheeler adds, "is made of more things than simple DNA. There is also a protein scaffolding that we know nothing about. Furthermore, you can't just start off an organism from scratch — there are maternal effects that have to be present from the beginning, when the zygote first starts dividing. Everything that directs this is maternally provided, and we don't have it."

"I'm not saying that it's theoretically impossible to do. It's just that" — and here Wheeler pauses for a moment — "we're not going to do it right now."

— Ruth Q. Leibowitz

Antarctica

Exhibition opens in Gallery 3 on October 22

Members' preview:
Wednesday, October 20, 4:00–7:00 p.m.,
and private viewing at Naturemax, 7:30 p.m.

The world's greatest mysteries lie at the bottom of the globe. Until 1821 no one had ever seen Antarctica, and it took over a century for a few determined explorers, pioneers, and scientists to truly put Terra Australis Incognita (the Unknown Southern Land) on the map. Nobody owns Antarctica — it is not a country or a province or a territory, and there are no natives. Everyone who visits is a foreigner, and the nations that undertake scientific work there act jointly to oversee all the continent's activities.

And what have they found? The new exhibition *Antarctica* profiles the region's wild life and its human visitors, revealing the effects humans have had on the global environment and the scientific, political, and economic choices that will shape Antarctica's future. Exhibits include penguin dioramas, a mummified seal, video programs, three-dimensional models of ice features, and tools used by people who have lived and worked on the continent.

Members can attend a pre-

view of the exhibition on Wednesday, October 20, from 4:00 to 7:00 p.m. At 7:30 p.m. there will be a special showing of the Naturemax film *Antarctica*. The continent's icy expanses are dramatically recaptured on the Naturemax Theater's four-story high, 66-foot wide screen in the IMAX format, which uses film ten times the size of conventional 35-mm film. Viewers take a spectacular ride through icy chasms and over towering glacial peaks and dive through six feet of ice to explore the underwater caverns of a glacier. Sidney Horenstein, the Museum's coordinator of environmental public programs and resident curator for the exhibition, will offer a ten-minute introduction and slide show before the film, which is 42 minutes long.

The preview is free and open only to Participating and Higher Members; your valid membership card is your ticket of admission. Tickets for the private viewing at Naturemax are \$5; use the coupon on page 3 to order tickets.

Antarctica Lecture Series

Five Wednesdays, starting October 27
7:00–8:00 p.m.
Kaufmann Theater
Series tickets: \$20 for Members,
\$25 for non-Members

American Museum scientists who have been to Antarctica will discuss the continent at a series of slide-illustrated lectures. They'll discuss glaciers and climate changes, penguins and other birds, dinosaurs and drifting continents, the ozone hole, global warming and the nature of the upper atmosphere, and the continent's treasure trove of meteorites. This series is presented in conjunction with the upcoming Gallery 3 exhibition (see the related feature above.)

October 27: *Antarctica: Ice and the Rocks Beneath*. Michael Novacek, vice president and dean of science.

November 3: *Antarctic Treasures from Space — Meteorites*. Martin Prinz, curator, Department of Mineral Sciences.

November 10: *Antarctica: Its Weather; the Ozone Hole; the Nature of the*

Upper Atmosphere to the Edge of the Universe. William A. Gutsch, Jr., chairman and associate astronomer at the Hayden Planetarium.

November 17: *Penguins and Other Antarctic Birds*. George F. Barrowclough, chairman and associate curator, Department of Ornithology.

December 1: *Antarctic Dinosaurs and Drifting Continents*. Mark Norell, curator, Department of Vertebrate Paleontology.

To register, make your check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: *Antarctica*, Attn: Sidney Horenstein, coordinator of environmental public programs, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192.

Cuba

Nature of an Island

A new exhibition will open in the Akeley Gallery on September 17. *Cuba: Nature of an Island* is a photographic chronicle of the Museum's work with Havana's Museo Nacional de Historia Natural in studies of the island's biodiversity.



The Mack Lipkin Man and Nature Lectures

Speaker: Geologist Frank H.T. Rhodes

Charles Darwin's Portrait of a Small Planet and Charles Darwin's Portrait of a Large Primate

Monday, October 25, and Tuesday, October 26
7:00 p.m., Main Auditorium
Both lectures: \$10 for Members, \$20 for non-Members
Single lecture: \$5 for Members, \$10 for non-Members

Frank H.T. Rhodes, the president of Cornell University, will present this year's Mack Lipkin Man and Nature Lectures. A geologist by training, Rhodes holds the faculty rank of professor of geology at Cornell. In addition to his doctorates in philosophy and science, he holds honorary degrees from more than 20 institutions. His numerous awards include the Geological Society's Daniel Pidgeon Fund, Lyell Fund, and Bigsby Medal.

In 1987 Rhodes was appointed by President Reagan to the National Science Board, and in 1989 he was appointed by President Bush to the President's Education Policy Advisory Committee. The author of more than 70 major scientific articles and monographs and 60 articles on education, Rhodes' books include *The Evolution of Life, Fossils, and Language of the Earth*.

The lectures will begin on Monday, October 25, with *Charles Darwin's Portrait of a Small Planet*. Darwin's early scientific vocation was geology, and his voyage aboard the *Beagle* (1831–36) coincided with the publication of Charles Lyell's *Principles of Geology*. Armed with Lyell's methodology, Darwin devoted himself to the study of the earth, based on his "conviction that some great law of nature remains to be discovered by geologists" (Darwin, unpublished note).

The lecture recounts Darwin's early life and explains the devotion of his early scientific career to the search for this law. Rhodes will discuss the centrality of the *Beagle* explorations to Darwin's other work, including his studies of the age and development of the earth, the history of life, the significance of volcanoes, coral reefs,

ocean-deeps, and mountain chains. The unique portrait of the planet that Darwin created represented the first attempt to design a model of the mechanism by which the earth "works." Darwin's theories about the earth were the foundation for his later theory of evolution and the source of fundamental questions about nature and natural law.

The second lecture, *Charles Darwin's Portrait of a Large Primate*, will take place on Tuesday, October 26. Rhodes will examine Darwin's mature career and his growing conviction that species developed through

evolution driven by natural selection. The scientist's early reticence in addressing the place of humankind in the evolutionary scheme will be addressed, along with the influence of studies of human origins and characteristics by Huxley, Lyell, and Wallace. The great evolutionary debates of the nineteenth century will be reviewed and linked to contemporary concerns about human nature, human values, and human destiny.

Use the coupon below to register for the lectures, and for further information call (212) 769-5019.

Mack Lipkin Man and Nature Lectures. Please indicate single or both lectures.

___ Mon., Oct. 25, and Tues., Oct. 26
Number of Members' tickets at \$10: ___
Number of non-Members' tickets at \$20: ___
Total amount enclosed for program: ___

___ Mon., Oct. 25, only
Number of Members' tickets at \$5: ___
Number of non-Members' tickets at \$10: ___
Total amount enclosed for program: ___

___ Tues., Oct. 26, only
Number of Members' tickets at \$5: ___
Number of non-Members' tickets at \$10: ___
Total amount enclosed for program: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Man and Nature*, Office of Special Events, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

The Department of Education Presents

Fall 1993 Lecture Series



Two Evenings with Jared Diamond on Our Disastrous Past



Wildlife Conservation:
Predators, Prey, and Habitats



From Belz to Brooklyn:
The Hasidim

Sacred Clowns by Tony Hillerman

Tuesday, September 21
7:00-8:30 p.m.
\$18 for Members and senior citizens,
\$20 for non-Members

Author Tony Hillerman compiles some of the most valuable ethnological material available today in his mysteries, which offer a sensitive portrayal of

Navajo life. Hillerman will discuss his attempts to heighten awareness of the richness and complexity of Navajo culture.

The author of 16 books, Hillerman is best known for his mystery novels involving the Navajo Tribal Police. His work has been specially recognized by the Navajo Nation and honored by the Jicarilla Apache people, and his books are used in Indian schools throughout the Southwest. Hillerman has also been honored by the American Anthropological Association. Copies of his newest book, *Sacred Clowns*, will be available for purchase and autographing.

Mystery, Research, and the Dead Sea Scrolls

Tuesday, October 19
7:00-8:30 p.m.
\$22.50 for Members, \$25 for non-Members

Placed in caves more than 2,000 years ago and discovered in 1947, the Dead Sea Scrolls yielded rare insights into the origins of Judaism and Christianity. The scholars controlling access to the scrolls have long contended that nothing of interest remains in the unpublished portions. Robert Eisenman, professor of Middle East religions at California State University at Long Beach, challenges this view as he relates the history, context, and background of these important documents. Eisenman is the coauthor of *The Dead Sea Scrolls Uncovered*, the first complete translation and interpretation of 50 key documents in more than 35 years.

Two Evenings with Jared Diamond on Our Disastrous Past

Tuesday, November 2 and Thursday, November 4
7:00-8:30 p.m.
\$18 for Members, \$20 for non-Members

Jared Diamond is professor of physiology at UCLA's Medical School and a member of the National Academy of Sciences. A frequent contributor to *Natural History* magazine, he is the author of *The Third Chimpanzee: The Evolution and Future of the Human Animal*, which will be available for purchase at the lectures.

Nov. 2: *The Great Leap Forward: How and When Did Humans Become Different from other Animals?* By 100,000 years ago, the skeletal anatomy of some of our ancestors was already nearly modern, yet we were still little more than glorified apes in our behavior. It was only around 40,000 years ago that art, religion, and other distinctly human traits began to appear. What precipitated our great leap forward and finally made us human?

Nov. 4: *Ecological Collapses of Ancient Civilizations: The Golden Age that Never Was* Among the most riveting puzzles of human history are the collapses of past civilizations such as those of the Classic Maya and the Anasazi Indians of the American Southwest. Could some of these societies have unwittingly undone themselves by destroying their environment? These fascinating mysteries are warnings of our own potential fate.

From Belz to Brooklyn: The Hasidim

Monday, October 18
7:00-8:30 p.m.
\$13.50 for Members, \$15 for non-Member

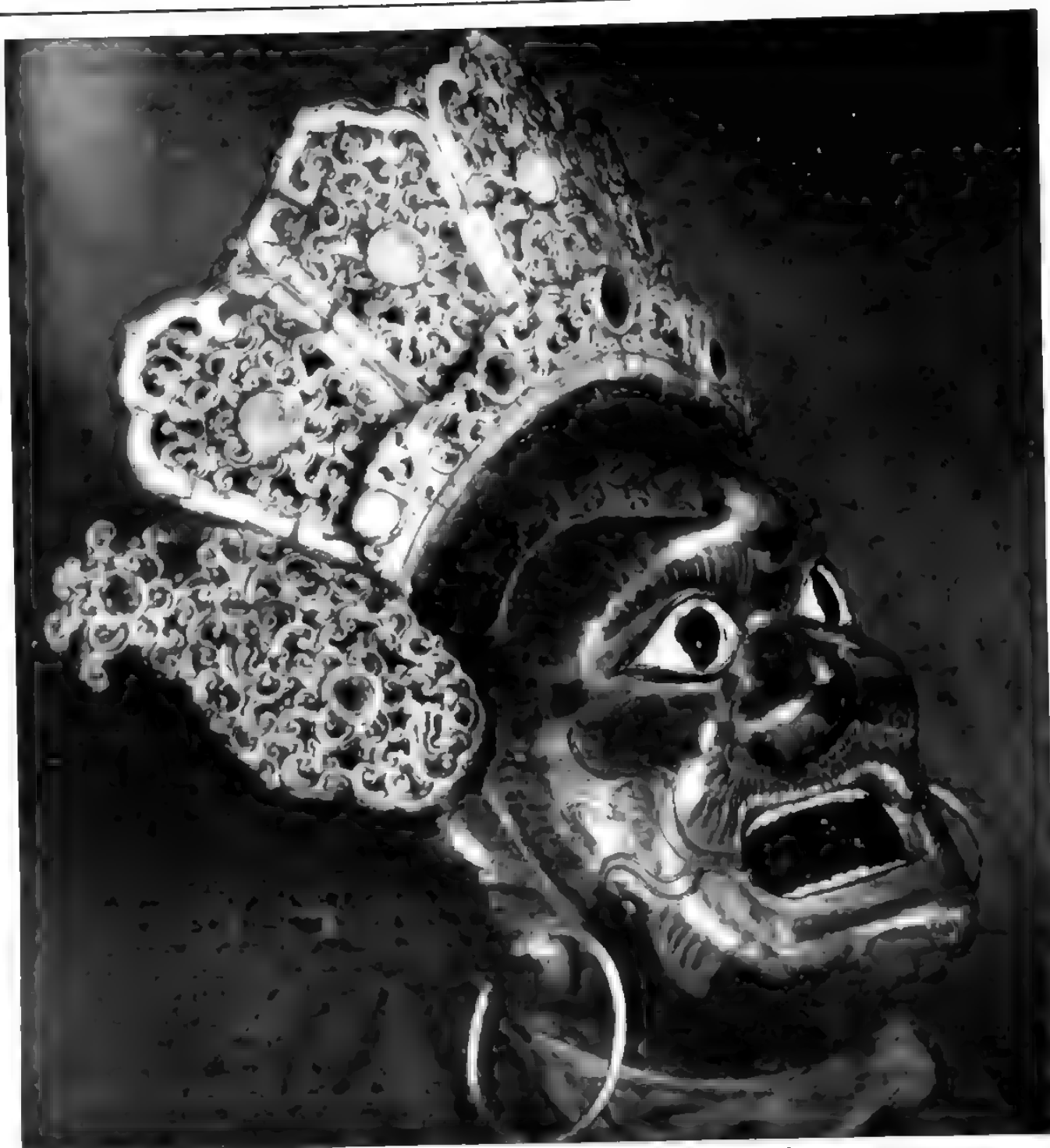
Ever since Rabbi ben Eliezer, known as the Baal Shem Tov ("Master of the Good Name"), began teaching Hasidism in the early eighteenth century, world Jewry has not been the same. Today the largest concentration of Hasidim in the world is located in three small communities in Brooklyn: Borough Park, Crown Heights, and Williamsburg.

In this slide illustrated lecture Yale Strom will discuss the research involved in his new book, *The Hasidim of Brooklyn: A Photo Essay*. He'll also play musical recordings that capture an integral part of Hasidic life.

Behind the Sacred Mask: Tools of the Sacred

Two Tuesdays, starting November 9
7:00-8:30 p.m.
\$22.50 for Members, \$25 for non-Members

Anthropologist Peter Gold will introduce the meaning and ritual use of sacred masks from several important cultural traditions on both sides of the Bering Strait. He'll discuss Yupik Inuit (Alaskan Eskimo) shaman's vision masks, kachina ritual masks of the Hopi and Pueblo Indians; Apache and Navajo tutelary deity masks, and the vast masked



Behind the Sacred Mask: Tools of the Sacred

pantheons and rites of Tibetans that issue from both Buddhism and the pre-Buddhist Bon religion.

Nov. 9: *Masks and the Sacred*. The meaning of masks as mirrors of the soul and the universe beyond.

Nov. 16: *Masks and the Ritual Process*. Masks as tools for establishing the sacred within an individual, family, and community at large through ritual dance and healing practices.

Gold will lead participants in this series on Museum tours that examine and discuss masks currently on display. Tours will look at the Eskimo gallery on Wednesday, November 10, at 7:00 p.m., and the Hall of Asian Peoples on Wednesday, November 17, at 7:00 p.m.

The Heirs of Prester John

Three Tuesdays, starting October 19
7:00-8:30 p.m.
\$22.50 for Members, \$25 for non-Members

The medieval legend of Prester John, a fabulously rich Eastern ruler, was the impetus for early explorations by Europeans seeking his wealth. Nina Root, director of Library Services, introduces a complex history that combines myth, legend, and fact.

Oct. 19: *The Legend of Prester John and Early Explorations*. The search for the fabulous riches of the mythical Eastern ruler Prester John led to the early Spanish and Portuguese explorations around Africa, into the Indian Ocean, the South Seas, and beyond. These explorations opened the Pacific to the English, Dutch, and US expeditions.

Oct. 26: *Napoleon in Egypt: The Egyptian Campaign and the Scientific and Artistic Commission*. In addition to military forces, Napoleon took a group of scientists, artists, musicians, and poets to Egypt. These savants suffered the same hardships as the foot soldiers and were abandoned to the British conquerors. The Commission established Egyptology as a science, formed l'Institut de l'Egypte and the Cairo Museum, and discovered the Rosetta Stone.

Nov. 9: *The Opening of Japan: Commodore Perry and the US Naval Squadron*. Japan was closed to all foreigners for centuries. Determined to establish safe harbors and coaling stations for its

whalers, the United States sent a naval squadron to negotiate a treaty in 1852. The story of the opening of Japan, as seen from both sides, is rich in pageantry, intrigue, and frustration.

Music of the Shamans: Songs and Drums from Siberia

Monday, October 25
7:00-8:30 p.m.
\$13.50 for Members, \$15 for non-Members

At the turn of the century the American Museum undertook one of the most ambitious and influential anthropological expeditions ever mounted. The Jesup North Pacific Expedition, under the direction of Franz Boas, documented cultures of eastern Siberia, collecting thousands of artifacts, photographs, and wax-cylinder sound recordings. Many of these items are associated with the practice of traditional shamanism.

This audiovisual program is presented by Thomas R. Miller, scientific assistant in the Department of Anthropology, who will examine the songs and instruments of Siberian shamans, the contexts in which they were collected, and their relevance to the post-Soviet cultural revival in Siberia.

Uncertain Roads: In Search of the Gypsies

Thursday, October 21
7:00-8:30 p.m.
\$13.50 for Members, \$15 for non-Members

The Gypsies — or Rom, as they call themselves in Romany — are probably one of the most romantically envisioned groups of people in the world. They're also one of the most misunderstood and maligned minorities in Europe and the United States today. Yale Strom will discuss his recent research among the Gypsies in Sweden, Hungary, Romania, and the Ukraine as presented in his new book *Uncertain Roads: In Search of the Gypsies*.

Dance Culture in Morocco and Egypt

Four Mondays, starting October 18
7:00-8:30 p.m.
\$31.50 for Members, \$35 for non-Members

Carolina Varga Dinicu performs, teaches, and directs her own dance company under the stage name Morocco. She has researched dance, music and dress in North Africa, the Mideast, the Mediterranean, and the Caucasus for three decades.

Oct. 18: *Folklore of Morocco*. This lecture examines dances from more than 20 Berber tribes and features theatrical folk dances and the best male shaba and tray dancer in Morocco.

Oct. 25: *National Folklore Troupe of Egypt (Firqat Kawmiiyya)*. Theatrical dances based on folkloric or social themes — which are traditional dances and costumes and which are fantasy or satire? How much influence came from outside Egypt?

Nov. 1: *Stars of Egyptian Oriental Dance*. Stylistic differences among the top stars of the current Egyptian Oriental dance scene and changing styles in costuming, music, and movement.

Nov. 8: *Folklore of Egypt and Sudan*. Who are the Dervishes and why do they whirl? What are the differences between the Turkish and Egyptian Dervishes? Who and what are the Ghawazi?

The Land and People of Siberia

Monday, October 18, and Tuesday, October 19
7:00-8:30 p.m.
\$22.50 for Members, \$25 for non-Members

Susan A. Crate, a graduate student in Siberian folklore at the University of North Carolina and a professional storyteller, singer, and interpreter, will present her research on Siberian culture and folklore.

Oct. 18: *Cultures and Sacred Lands of Southern Siberia*. This presentation explores the regions of Buryatia and Lake Baikal, Mongolia, and Tannu-Tuva, viewing traditional cultures as they are today.

Oct. 19: *Dance of Life, Circle of Life*. The Sakha of northeastern Siberia celebrate the arrival of summer with the isakh kumiss festival. The asyokhai circle dance, an integral part of that festival, emerges in contemporary times as the Sakhas' major ethnic voice. This lecture presents slides and soundtracks of the contemporary festival.

Geology of the Planets

Four Thursdays, starting October 21
7:00-8:30 p.m.
\$31.50 for Members, \$35 for non-Members

This series of lectures — augmented with slides, laser disk images, and film — will take a tour of the planets and their moons for a look at their salient geologic features. Sidney Horenstein, coordinator of the Museum's environmental programs, will begin with an exploration of the solar system and discuss the origin of the planets.

Oct. 21: *Origin of the Solar System, Meteorites, the Dynamic Earth*

Oct. 28: *The Moon, Mercury, and the Asteroids*

Nov. 4: *Venus and Mars*

Nov. 18: *Jupiter and Saturn and Their Moons Uranus, Neptune, and Pluto*

Mushrooms and Conifers, Mosses and Ferns

Five Thursdays, starting October 14
7:00-8:30 p.m.

or

Five Mondays, starting October 18
2:30-4:00 p.m.
\$36 for Members, \$40 for non-Members

This series of slide-illustrated lectures introduces the mushrooms, mosses, and ferns of forest floors and meadows, lichens of rocky and sandy places, algae at the edge of the sea, and conifers. Identification and ecology of species from the Northeast are stressed by William Schiller, lecturer in botany in the Education Department.

1. *Survival Strategies and Evolution in Plants*
2. *Seaweed Diversity and Sexuality*
3. *The World of Mushrooms and Lichens*
4. *Mosses, Ferns, and the First Forests*
5. *Conifers and Living Fossils*

Minerals, Myths, and Magic

Three Tuesdays, starting November 9
7:00-8:30 p.m.
\$27 for Members, \$30 for non-Members

Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, will relate humanity's 35,000-year-old love affair with gemstones.

Nov. 9: *Paleolithic Times and Early Civilization*. Cro-Magnon jewelry. The Rise of Western Civilization in Judea, Egypt, Greece, and Rome. Gemstones used in religion, art, science, or for personal adornment. The Breastplate of Aaron. King Solomon's Mines. Theophrastus' *De Lapidibus* (c. 315 BC). Pliny the Elder's *Natural History* (c. AD 77). Graeco-Roman gem lore

Nov. 16: *European Middle Ages*. Alchemy's origins in Alexandria. St. Jerome, an early Christian expert on the use of gemstones in the Bible. Medieval theories found in the works of St. Hildegard and St. Albert about the curative or deadly powers of gemstones. Literary sources of misinformation about gemstones.

Nov. 23: *Gem Mythologies of the Americas and Far East*. The ancient mythologies of Chinese jade. Dual influence of Taoism and Buddhism on jade symbolism. Marco Polo's thirteenth-century visit to the gem-rich island of Ceylon. Gemstone mythology of India. Use of jade by Olmec, Maya, and Aztec cultures. Turquoise stone fetishes of Native American Indians.

Minerals, Myths, and Magic Tour of the J.P. Morgan Memorial Hall of Gems

Friday, Nov. 19, or Monday, Nov. 22
7:00-8:30 p.m.
\$15 (no discount for Members)
Limited to 20 adults

It would take 1,001 nights for Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, to relate all of the stories he's learned about minerals, myths, and magic. He'll tell some of the best — Sinbad the Sailor in the Valley of Diamonds, Benvenuto Cellini's brush with death in the Castle of Saint Angelo in 1537, and other curious gemological tales

Jumbo Lecture Series

Saturday, October 2
2:00-3:30 p.m.
and
Two Wednesdays, October 20 and 27
7:00-8:30 p.m.
\$27 for Members, \$30 for non-Members

These lectures, which are presented in conjunction with the exhibition *Jumbo: The World-Famous Elephant*, will explore the natural history of elephants and conservation issues.

Oct. 2: *Jumbo and His Relatives*. At the time of Jumbo's capture and for many years after, very little was known about the history of African elephants. Richard Van Gelder, former curator in the Department of Mammalogy, will discuss the natural history of elephants

Oct. 20: *Conservation of African Forest Elephants*. Bill Weber, director of Conservation Operations for NYZS/The Wildlife Conservation Society, will describe his work and a preservation project focused on the elusive African forest elephant

Oct. 27: *Why Save Elephants: The Aspirin Approach*. Jeheskel Shoshani, research associate with the Cranbrook Institute of Science, views the elephant from artistic, biological, ecological, evolutionary, and historical standpoints

Predators, Prey, and Habitats

Four Saturdays or Sundays: October 23, 24, 30, or 31; November 6, 7, 13, or 14
11:00 a.m. or 1:00 p.m.
Each program \$9 for adult Members, \$10 for adult non-Members, \$6 for Members' children, \$7 for non-Member students and children

Andrew Simmons, a celebrated wildlife expert specializing in predators, has studied, raised, and

lectured on wild animals for more than 20 years. He travels with and exhibits big cats, bear cubs, carnivorous reptiles, and birds of prey, telling fascinating tales about how these creatures survive and adapt within their environments. Audiences of all ages attain insights into wildlife behavior, including the ways in which species become endangered and how research and wildlife management contribute to their survival. This program is supported in part by Global Communications for Conservation, Inc.



Fall Botany in Central Park

Animal Drawing

Eight Tuesdays, starting October 19
7:00-9:00 p.m.
\$105 (materials not included; no discount for Members) and limited to 25 persons

Join a Museum artist to sketch subjects such as gazelles on the African plains and timber wolves in the snowbound North. After the Museum has closed to the public, students use the famed habitat groups as well as individual mounted specimens. Stephen C. Quinn, naturalist and assistant manager in the Museum's Exhibition Department, guides each participant, whether beginner or experienced artist

Botany in Central Park

Saturdays, Oct. 2 or 16, or Wednesday, Oct. 13
9:00-11:00 a.m.
\$15 per walk (no discount for Members)
Limited to 25 people

A two-hour morning walk in Central Park observes signs of fall in the flowers and trees. Participants will learn about plant identification and ecology from William Schiller, lecturer in botany in the Education Department

Arthur Marks Tours

Sundays, October 3 and 24
1:30-3:30 p.m.
\$25 for both walks; \$15 for one (no discount for Members)

Oct. 3: *Living on Manhattan's West Side* Broadway and Central Park West. Starting at 106th Street near Straus Park — near the place

where Duke Ellington once lived — this tour will wend its way down Broadway to turn east at 96th Street and conclude at Central Park West.

Oct. 24: *With Central Park as a Front Yard*. Starting at 86th Street and Central Park West, this tour will head north along the park to end at the First Church of Christ Scientist at 96th Street. The architectural merits of buildings near Central Park will make it clear why so many people love this neighborhood.

Trip to Sterling Hill Mine

Saturday, October 2
9:30 a.m.-5:00 p.m.
\$50 (no discount for Members)
Limited to 36 adults

Visit the last operating zinc mine in New Jersey and tour underground tunnels, view spectacular mineral displays in a natural environment, and learn about mining history and technology. Joseph J. Peters, senior scientific assistant in the Department of Mineral Sciences, leads this exciting tour

Spring 1994 Weekend for Bird Enthusiasts

Saturday and Sunday, May 14 and 15
Limited to 36 adults; fee: \$175

A two-day bus trip covers wooded areas near New York City and makes daytime and evening visits to a lake and bog area in the Pine Barrens of New Jersey. The tour continues to Brigantine National Wildlife Refuge, where many marsh birds as well as woodland species can be seen. This trip is led by Jay Pitocchelli, professor in biology at Saint Anselm's College. Call (212) 769-5310 for the itinerary and application

Spring 1994 Weekend Whale Watch off Cape Cod

Friday, May 20-Sunday, May 22
Limited to 45 adults; fee: \$400

Our search for whales involves three 4-hour whale cruises by private charter from Provincetown. In addition to the marine biologists aboard the boat, two Museum staff members will accompany the group: Brad Burnham, senior instructor in natural science in the Education Department, and naturalist Stephen C. Quinn, who will assist in identifying the many species of coastal birds that may be seen. Cost includes transportation, two nights' accommodation, meals, and lectures. Call (212) 769-5310 for the itinerary and application

Lecture Series

I enclose a stamped, self-addressed envelope together with a check (or money order) payable to the American Museum of Natural History for \$_____. Advance registration is requested, but registration will be accepted on the opening night if the course is not filled. No single lecture tickets are sold in advance. There are no refunds. Children are not admitted to lectures, workshops, or field trips. For further information call (212) 769-5310. Please print

Course	Day	Hour
Course	Day	Hour
Name: _____		
Address: _____		
City: _____ State: _____ Zip: _____		
Daytime telephone: _____		

Please make check payable to the American Museum of Natural History and mail with a stamped, self-addressed envelope to: Lecture Series, Education Department, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192

1993 Margaret Mead Film Festival

Monday, October 4–Sunday, October 10
Monday–Thursday, 6:30–10:30 p.m.
Saturday, 11:00 a.m.–8:30 p.m.
Sunday, 11:00 a.m.–5:00 p.m.



The Anthropologist on Wednesday, October 6



Madame l'Eau on Monday, October 4

Daily tickets, which go on sale at 5:00 p.m. on weekdays and at 10:30 a.m. on weekends, are \$7 for Members and \$8 for non-Members and are not sold in advance. A ticket does not guarantee admission to the film of your choice; all seating is on a first-come, first-served basis.

A festival pass (valid October 4–10) is \$36 for Members (\$40 for non-Members). Use the coupon at right to order a pass.

The following listings are festival highlights. For a complete schedule of films and videos call (212) 769-5305 or use the coupon at right.

Monday, October 4

Auditorium

6:30 p.m. *Madame l'Eau*. (Jean Rouch, 1992. 105 min. US premiere.) Jean Rouch and his Nigerian friends — Lam, Damouré, and Tallou, who appeared in *Jaguar* and *Petit à Petit* — create another improvisational film. They bring a new twist to the concept of agricultural devel-

opment when they travel to Holland with their faithful mule to learn how to apply windmill technology to their drought-ravaged fields. The results are both comical and surreal. Speaker: Director Jean Rouch.

8:40 p.m. *The Shvitz*. (Jonathan Berman, 1993. 47 min. NY premiere.) An unlikely community is forged in the 240° heat of the last traditional steambaths in the United States. The film traces how this Eastern European custom has evolved into the late twentieth century. Speaker: Director Jonathan Berman.

Linder Theater

9:20 p.m. *Ladyboys*. (Jeremy Marre, 1992. 51 min. Video.) Two teenage boys leave their homes in rural Thailand to seek fame and fortune as transvestite performers. In the glamorous cabarets of the urban south they encounter pain, prejudice, and humor as they strive for new identities.

Tuesday, October 5

Auditorium

6:30 p.m. *Black Man's Houses*. (Steve Thomas, 1992. 58 min. NY premiere.) "They've got blue eyes and blond hair, so how can they be Aborigines?" The settlement of Wybalenna (Black Man's Houses) was established in the 1830s for the internment of black survivors of the conflict between Europeans and Aborigines in Tasmania. This film documents the reoccupation of this site by Tasmanian Aborigines searching for the mass graves of their ancestors. It also explores the meaning of aboriginality today, when genetics and skin color matter less than kinship and cultural association. Speaker: Director Steve Thomas.

7:50 p.m. *Hear My Cry*. (Maciej Janusz Drygas, 1991. 47 min.) A powerful and disturbing portrait of the 1968 public self-immolation of Ryszard Siwiec, a 60-year-old Pole protesting Soviet oppression of Poland in the wake of the invasion of Czechoslovakia. Weaving together family reminiscences, eyewitness accounts, and archival footage, this film conveys the shock, confusion, and mixed reactions of those directly touched by this desperate act.

Kaufmann Theater

7:45 p.m. *The Dragon Bride*. (Joanna Head, 1993. 55 min. Video. US premiere.) The marriage of a teenage girl to four 8- to 16-year-old brothers is not unusual among the Nyinba people of the Nepalese Himalayas. The young bride faces the prospect of life with four husbands as preparations for the lavish wedding begin.

Linder Theater

6:30 p.m. *Zoo*. (Frederick Wiseman, 1993. 130 min.) Wiseman captures the drama of everyday life at the Miami Zoo with his masterful observational style. He reveals the interrelationships of the institution's animal, human, ethical, research, and financial elements.

Wednesday, October 6

6:30 p.m. *Total Baby*. (Kate Davis, 1993. 57 min. World premiere.) A wry look at some of the contemporary philosophies and products of American middle-class child rearing is juxtaposed with shifting practices and beliefs since the seventeenth century. Speaker: Director Kate Davis.

7:50 p.m. *The Anthropol-*

ogist. (Andrea Gschwendtner, 1992. 50 min. US premiere.) In the early twentieth century, Rudolph Poch, Vienna's first anthropologist, pioneered the use of moving pictures and wax-cylinder recordings. With the outbreak of World War I, he continued his work in the Austro-Hungarian POW camps. His studies were used later during the eugenics movement. This film weaves drama and documentary to raise chilling questions about the use and misuse of anthropological research.

Thursday, October 7

Auditorium

6:30 p.m. *Tempus de Baristas*. (David MacDougall, 1993. 100 min. World premiere.) The change in lifestyles effected by technology are the focus of this film, in which a 17-year-old shepherd named Pietro compares his life with those of his 60-year-old father and their mutual friend Miminu, who is 43. Although separated by only 20 years, they have grown up in dramatically different worlds. Speaker: Director David MacDougall.

8:30 p.m. *Children of Fate: Life and Death in a Sicilian Family*. (Susan Todd, Andrew Young, Robert Young, 1992. 85 min.) In 1961 Robert Young went to Sicily to document for NBC the social conditions of Corleone, a Palermo slum. The documentary was never aired since it was deemed "too powerful for US audi-

ences." In 1988 Young returned to the community with his son and daughter-in-law to create a follow-up film that interweaves archival and contemporary footage, focusing on a mother who struggles to survive in the face of illness, death, and economic and marital hardships. Speakers: Susan Todd, Andrew Young.

There will also be a retrospective of the work of Timothy Asch, who will present and discuss his ethnographic films. On Tuesday, October 5 he'll show the Indonesia films and on Wednesday, October 6, the Yanomamo films.

Festival T-Shirt

These 100 percent cotton T-shirts feature the festival's distinctive 4-mask logo. Use the coupon below to order and be sure to specify medium, large, or extra-large. The shirts are \$11.50 each for Members and \$13 for non-Members.

Become a Friend of the Festival for \$125

Benefits include a festival pass; an official T-shirt, an invitation for two to the Director's Reception, a gathering of the festival's international array of film directors, advisory committee and staff; and reserved seating (make your contribution before September 30 and you can reserve a seat for any 6:30 screening). Please use the coupon below to become a Friend.

1993 Margaret Mead Film Festival

Festival Pass

Number of passes at Members' price of \$36: ____
Number of passes at non-Members' price of \$40: ____
Total amount enclosed: ____

Margaret Mead Film Festival T-Shirt

____ Medium ____ Large ____ Extra-large
Number of T-shirts at Members' price of \$11.50: ____
Number of T-shirts at non-Members' price of \$13: ____
Total amount enclosed: ____

Friend of the Festival

Number of Friends at \$125 each: ____
Total amount enclosed: ____

____ Please send me a complete schedule of films and videos

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Mead Festival, Education Dept., American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Field Class in Bird ID in Central Park

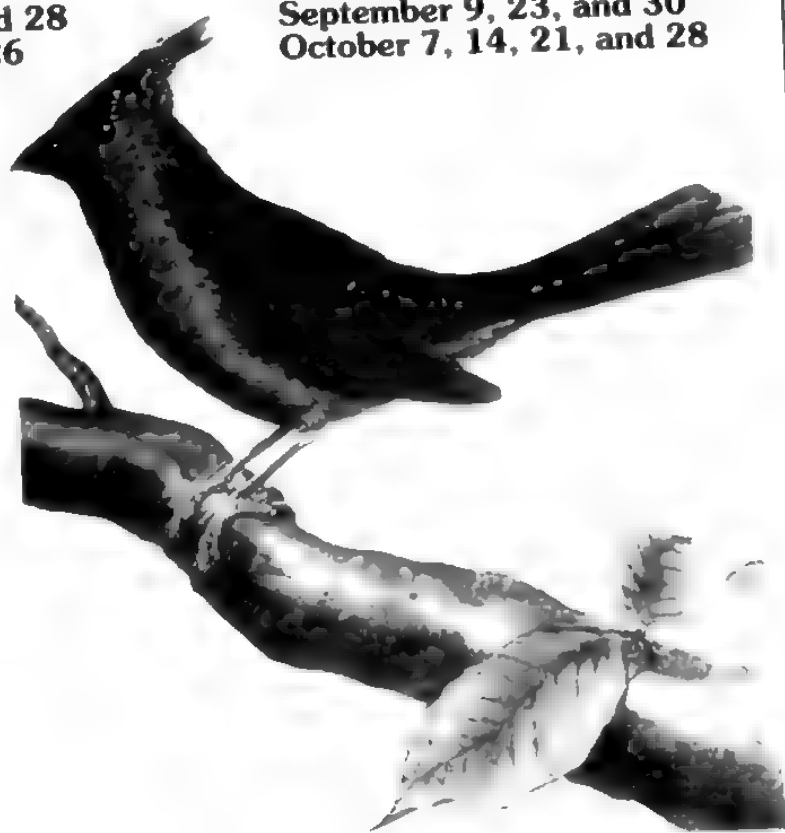
Tuesdays, 7:00-9:00 a.m.
September 7, 14, 21, and 28
October 5, 12, 19, and 26

Thursdays, 9:00-11:00 a.m.
September 9, 23, and 30
October 7, 14, 21, and 28

Join naturalists Stephen C. Quinn (on Tuesday) and Harold Feinberg (on Thursday) in observing the fall migration of birds through Central Park. Participants will learn how to identify species according to their field marks, habitat, behavior, and song.

The fee for the program is \$5, to be paid to the instructor each morning before the walk starts. There is no pre-registration. Classes meet across from the Museum on the northeast corner of Central Park West and 77th Street.

For further information call (212) 769-5310.



Global Cultures in a Changing World

The Education Department offers public programs that celebrate diverse cultural groups and their traditions. Lectures, films, demonstrations of music and dance, workshops, and performances are featured. These programs will address cultural misconceptions and biases, issues concerning adults and youths in a changing world, and the preservation and change of cultural traditions.

These programs are presented in conjunction with

city-wide events, including observations of the five hundredth anniversary of Puerto Rico and the Dominican Republic, the Year of Indigenous Peoples, Festival Korea, India Festival, Black History Month, Women's History Month, Asian Pacific American Heritage Month, and the city's global mosaic of cultures and traditions.

For a brochure listing specific programs call the Multi-cultural Outreach Office at (212) 769-5315.

Fall Children's Workshops

panzees will help to define their connections, similarities, and differences. Presented by Anita Steinhart, physical anthropology doctoral candidate. **Two Sundays, Nov. 7 and 14, 2:00-4:00 p.m. \$30.**

SATURDAY WORKSHOPS FOR PRESCHOOLERS

A Whale's Tale

One 4-year-old with one adult

Children will help tell the tale of a humpback whale's migration from the warm waters of the south to the colder northern seas. Film, song, a take-home sheet activity, and a visit to the Hall of Ocean Life are included. Presented by Dayna Reist, instructor at the New York Aquarium and specialist in early childhood education. **Saturday, Oct. 2, 10:30-11:30 a.m. \$20**

HALF-DAY WORKSHOPS

Paper Making

Grades 4 and 5 (ages 9-11)

The craft of paper-making is centuries old. Participants use microscopes and study plant structure while learning the art of paper-making. Presented by Museum science education instructor Jay Holmes. **Saturday, Oct. 9, 10:30 a.m.-1:30 p.m. \$25**

All About Fish

One 5-year-old with one adult

Children will learn about fish shapes and how fish breathe and swim in a hands-on program that includes making fish prints, visiting the Hall of Ocean Life, and creating fish windsocks. Presented by Judith Levy, who has taught at the Carnegie Museum of Art. **Saturday, Oct. 16, 10:30 a.m.-noon. \$25**

Northwest Coast Indian Stories

Grades 2 and 3 (ages 7-9)

Can you "read" a totem pole? Totem poles serve as memory devices, unlocking stories and legends. Traditional stories about totem poles and other objects of Northwest Coast art will be told to young children using artifacts and a visit to the exhibition hall. Presented by Ron Sopyla, instructor at the Westside Montessori School. **Saturday, Oct. 16, 10:30 a.m.-1:30 p.m. \$25**

Science Fun

Grades 2 and 3 (ages 7-9)

Find out how to make rainbows, play tricks with mirrors, and peek around the corner without being seen. Presented by Dina Cukier Schlesinger, computer science teacher, P.S. 140. **Saturday, Oct. 23, 10:30 a.m.-1:30 p.m. \$25.**

The Fish We Eat

Grades 2 and 3 (ages 7-9)

Why is a flounder flat? What does a tuna eat? These and other questions about food from the sea will be answered by making fish prints, playing games, and designing your own fish. Presented by Museum science education instructor Brad Burnham. **Saturday, Nov. 6, 10:30 a.m.-1:30 p.m. \$25**

Drawing Whales

Grades 5 and 6 (ages 10-12)

Visit the Hall of Ocean Life with Richard Ellis, the well known painter of marine natural history. Ellis will talk about the Museum's whale exhibits and the hall's design and construction and introduce children to techniques of drawing whales. **Saturday, Nov. 6, 10:30 a.m.-1:30 p.m. \$25.**

Drawn from the Sea

Grades 4 and 5 (ages 9-11)

Learn the fundamentals of drawing with contour drawing, pen-and-ink, and watercolor techniques. Children will study basic fish anatomy and sketch in the Hall of Ocean Life. Presented by Angela Tripl-Weiss, art director at P.S. 87. **Saturday, Nov. 13, 10:30 a.m.-1:30 p.m. \$25**

Knitting

Grades 5 and 6 (ages 10-12)

Discover how wool gets from the back of a sheep to your back. Children will see demonstrations of carding and spinning and learn simple knitting techniques. Presented by Museum science education instructor Emily Ognitz. **Saturday, Nov. 13, 10:30 a.m.-1:30 p.m. \$25**

Holiday Crafts

One 8- or 9-year-old with one adult

Join us for a multicultural holiday craft festivity at the Museum. Presented by craft artist Robin Otton. **Saturday, Nov. 20, Session A: 10:30 a.m.-noon. Session B: 12:30-2:00 p.m. \$20.**

Beautiful Swimmers

Grades 3 and 4 (ages 8-10)

Learn about sawfish, sharks, and angelfish in a discovery program that explores fish adaptations through games, fish printing, songs, film, and a visit to the Hall of Ocean Life. Presented by Merryl Kafka, assistant director of education at the New York Aquarium. **Saturday, Nov. 20, 10:30 a.m.-12:30 p.m. \$20**

SUNDAY COURSES

Join the Green Team

Grades 4 and 5 (ages 9-11)

A two-part awareness workshop on environmental problems facing our planet today. Children are given a "green audit" to take home. At the second meeting, a review of the audit will increase their awareness and show how we all can make a difference. Presented by Roy Mueller, special events coordinator/assistant manager, the Nature Company, South Street Seaport. **Two Sundays, Oct. 17 and 24, 10:30 a.m.-12:30 p.m. \$30**

Making Tunnel Books

Grades 5 and 6 (ages 10-12)

Based on an exploration of the Hall of Ocean Life, children will draw marine life, then cut, fold, and assemble a three-dimensional tunnel book. Presented by Lois Morrison, textiles and book artist, author, and teacher of American crafts. **Two Sundays, Oct. 17 and 24, 10:30 a.m.-12:30 p.m. \$30**

Human Origins

Grades 5 and 6 (ages 10-12)

Children study human origins using museum casts of fossil ancestors to broadly trace our evolutionary lineage and those of other primates. A session in the laboratory using skeletal material of both modern humans and chim-

DEPARTMENT OF EDUCATION Workshops for Young People

I would like to register for the following workshop(s)

Workshop: _____

Student's last name: _____

First: _____

Age: _____ Grade: _____

Parent's last name: _____

First: _____

Daytime phone (area code) _____

Address _____

City _____

State _____

Zip _____

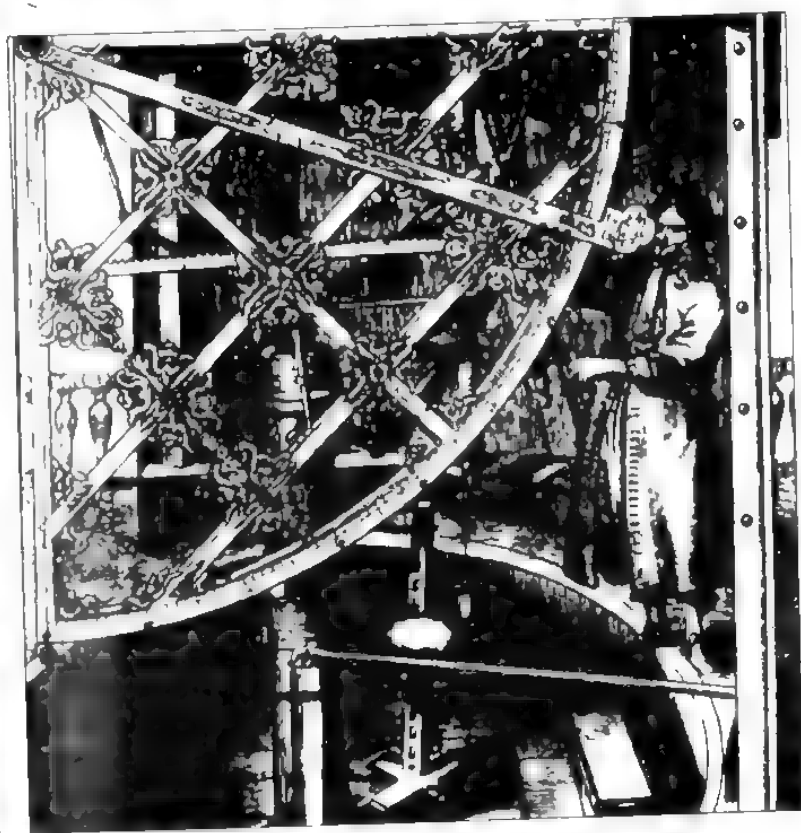
Total amount enclosed: _____

Register early. Class sizes are limited. Separate check per workshop or course.

Please note that due to limited registration discounts are not available for these workshops.

Send this coupon with your check or money order payable to the American Museum of Natural History and a **self-addressed, stamped envelope** to Workshops for Young People, Department of Education, American Museum of Natural History, 79th Street and Central Park West, New York, NY 10024-5192.

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy

Eight Mondays, beginning Sept. 20, or eight Tuesdays, beginning Sept. 21; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

A first course in astronomy, designed to introduce the many interesting aspects of the universe to those without a math or physics background. Topics include earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes. Common observations such as planet motions and the rising and setting of the sun and moon are explained. No previous knowledge of astronomy is assumed. The course serves as a prerequisite for the intermediate-level courses, where specific areas are covered in more detail.

Adventures in Astronomy

Five Saturdays, beginning Oct. 9, 9:40-11:40 a.m.
\$67.50 for Members
\$75 for non-Members

Confused about the difference between a star and a planet? Can't tell astronomy from astrology? Don't know Aquarius from Sagittarius or a black hole from a brown dwarf? Join us for a new Saturday course for the whole family (ages 10 and up). Through the use of the Sky Theater, labs, and astronomical equipment, we will explore the birth and death of stars, the origin of the universe, the search for extraterrestrial life, and the current night sky.

Celestial Highlights

Three selected Mondays, Oct. 18, Nov. 15, Dec. 13; 6:30-7:40 p.m.
\$27 for Members
\$30 for non-Members

This course will focus on the interesting and exciting events in the skies of the

coming month. The night sky will be accurately simulated by the Zeiss projector in the Sky Theater, and students will learn how to find prominent constellations of the season and where and when to see gatherings of the moon and planets. The Planetarium's extensive collection of special effects will illustrate upcoming celestial events, including meteor showers and eclipses. Students will also learn about prominent planets, current space missions, and how to find deep-space treasures like nebulae, star clusters, and galaxies that are visible through binoculars or small telescopes.

How to Use a Telescope

Eight Mondays, beginning Sept. 20; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

An introduction to choosing and using a small amateur telescope. Topics include basic optics of telescopes, equatorial and altitude-azimuth mountings, eyepieces, collimating a telescope, setting up for observation, locating objects in the sky, and the use of charts and other observation aids. No previous knowledge of astronomy is assumed, and this course is particularly recommended for those considering the purchase of a telescope and those who have one but aren't sure how to use it.

ASTRONOMY: INTERMEDIATE COURSES

Stars and Galaxies

Six Tuesdays, beginning Sept. 21; 6:30-8:10 p.m.
\$72 for Members
\$80 for non-Members

Stars come in a wide variety of colors — red, yellow, and blue — and sizes — from giants to dwarfs. Learn about the diversity of stars, from their births to their sometimes spectacular death throes as supernovae. Not all stars are

individuals like our sun; most come in multiple systems and clusters. The types of galaxies in which we find these stars are equally diverse. Discover exotic exploding galaxies and basics about our own Milky Way with Joe Patterson of Columbia University's Department of Astronomy and Astrophysics.

METEOROLOGY

Weather and Climate

Eight Thursdays, beginning Sept. 23; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

Everyone talks about the weather. This course is for those who would like to know more about the atmosphere — how it works and how it affects us. Topics include the structure and motions of the atmosphere, climate, weather forecasting, and atmospheric optics such as rainbows, halos, and twinkling stars. No formal training in physics or math is required.

SPACE ART

Introduction to Space Art

Five Wednesdays, beginning Sept. 22; 6:30-8:40 p.m.
\$67.50 for Members
\$75 for non-Members

Planetarium artist Dennis Davidson will discuss drawing and painting techniques, how to research scientifically accurate astronomical art, the history of space art, and the role of the artist at the Planetarium. In this studio course, students will create astronomy drawings and paintings with individual guidance from the instructor. Rendering techniques in acrylic, gouache, pen and ink, and airbrush will be demonstrated. Students must bring their own supplies and be prepared to sketch at the first session. Enrollment is limited to 15 students.

AVIATION

Ground School for Private and Commercial Pilots

Fifteen sessions, Tuesdays and Thursdays, beginning Sept. 21; 6:30-9:00 p.m.
\$166.50 for Members
\$185 for non-Members

This course helps private and commercial pilots prepare for the FAA written examinations. It can also help as a refresher for biennial flight reviews, relieve some instances of fear of flying, and survey some aspects of flight training and aircraft ownership. Subjects include physiological factors affecting pilot performance, visual and electronic navigation (VOR, ADF, DME, SAT, NAV, and LORAN), charts, publications, computers, principles of aerodynamics, weather, instruments, engine/propeller operations, communications, regulations, and safety. Students will plan cross-country trips and have an opportunity to try the flight-deck simulator. The instructor is FAA certified.

Ground School for Instrument Pilots

Fifteen sessions, Tuesdays

and Thursdays, beginning Sept. 21; 6:30-9:00 p.m.
\$166.50 for Members
\$185 for non-Members

Intended for those planning to take the FAA written examination for an instrument rating. This course also provides updated information for instrument competency checks and familiarizes VFR pilots with instrument techniques. Subjects include electronic navigation (VOR, ADF, DME, SAT, NAV, and LORAN), weather analysis, aircraft performance, communications and radar procedures, use of specialized charts and publications, en route approach and departure procedures, applicable federal aviation regulations, psychological factors affecting pilot performance, and extensive use of flight computers in flight planning. Students will have an opportunity to practice procedures on a flight-deck simulator. The instructor is FAA certified.

Weather to Fly

Ten sessions, Tuesdays and Thursdays, beginning Sept. 21; 6:30-8:10 p.m.
\$99 for Members
\$110 for non-Members

This new course is not for pilots only but for anyone interested in flying, its safety, and what goes on in the cockpit while flying in bad weather. Designed for the curious and the concerned, the course explains maintenance inspections, weather briefings, and airplane sounds and sensations. Students will be assured of a more pleasant flight when next they fly. The class meets on Tuesdays and Thursdays for five weeks.

NAVIGATION: BASIC COURSE

Navigation in Coastal Waters

Eight Mondays, beginning Sept. 20, 6:30-9:00 p.m.
\$99 for Members
\$110 for non-Members

An introduction to piloting

and dead reckoning for present and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites. Students are required to purchase an equipment kit.

NAVIGATION: INTERMEDIATE COURSES

Introduction to Celestial Navigation

Ten Thursdays, beginning Sept. 23; 6:30-8:40 p.m.
\$99 for Members
\$110 for non-Members

This course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. The course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem-solving and chartwork are emphasized. Students are required to purchase a copy of *Sight-Reduction Tables for Marine Navigation, Volume 3* (Pub. No. 229).

Astronomy for Celestial Navigators

Eight Wednesdays, beginning Sept. 22; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

This new course is designed for students who are already familiar with navigating by the stars but want to know more about the astronomy that makes it work. Topics include systems of celestial coordinates and the navigational triangle; the absolute motions and distances of the navigational stars, planets and the moon; the motions of the earth in the solar system; planetary and lunar configurations as observed from earth and many other subjects.

Courses for Stargazers

I would like to register for the following Planetarium course(s)

Name of course: _____
Price: _____ (Please note that discount prices apply only to Participating and Higher Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: *Courses for Stargazers*, Hayden Planetarium, Central Park West and 81st Street, New York NY 10024-5192. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, 9:30 a.m.-4:30 p.m. **No credit cards accepted. Do not include ticket requests or checks for American Museum programs.**

Happenings at the Hayden

Sky Show

Orion Rendezvous...A Star Trek Voyage of Discovery

Climb aboard the starship *Antares* for a cosmic journey. Actor LeVar Burton joins the crew as Lieutenant Commander Geordi La Forge, the character he plays on *Star Trek: The Next Generation*. Enter the twenty-fourth century and journey to a place where six suns blaze in the sky, and then voyage to a sun 100 million times bigger than our own. Discover where stars are born and explore the galactic graveyard of a star that died in one of the most powerful explosions in the universe. Space enthusiasts and *Star Trek* fans alike will know that they have gone where no planetarium audience has gone before.

Showtimes:
Mon.-Fri. 1:30 and 3:30 p.m.
Sat. & Sun. 1:00, 2:00, 3:00, and 4:00 p.m.
Admission to the Sky Show for Participating and Higher Members is \$6 for adults and \$3.50 for children ages 2 to 12. Prices and schedule subject to change without notice. For non-Members' prices and additional information, call (212) 769-5100.

Exhibition

Star Trek® Exhibition: A Retrospective of the Sixties

Alien costumes, starfleet uniforms, *Enterprise* models, and assorted props and photos from Paramount's original 1960s television series are on display in a special exhibition curated by the National Air and Space Museum. Explore the historical, political, social, and cultural themes incorporated into the weekly *Star Trek*® series. For information call (212) 769-5100.

Lecture

Frontiers in Astronomy and Astrophysics

On Monday, October 25, at 7:30 p.m., Thomas Bania of Boston University will present an illustrated talk, "The First 100 Seconds in the Life of the Universe." Bania will discuss how probing the strange happenings at the beginning of time and space may help us to understand the nature and fate of the universe.

This lecture is part of the *Frontiers in Astronomy and Astrophysics* series. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. Use the coupon at right to order tickets, and for information about ticket availability and upcoming lectures call (212) 769-5900.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Oct. 2, at 10:30 and 11:45 a.m. and Sat., Nov. 6, at 10:30 a.m. Admission for Participating and Higher Members is \$6 for adults and \$3.50 for children.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO™ and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., Nov. 6, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900.

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5100.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5920 or (212) 769-5100.

Lecture: "The First 100 Seconds in the Life of the Universe." Monday, October 25, 7:30 p.m.

Number of Members' tickets at \$6 (no more than 4, please): _____
Number of non-Members' tickets at \$8: _____
Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to: Lecture, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192.

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Museum Notes

Hours

Exhibition Halls
Mon.-Thurs. & Sun. 10:00 a.m.-5:45 p.m.
Fri. & Sat. 10:00 a.m.-8:45 p.m.
The Museum Shop
Mon.-Thurs. & Sun. 10:00 a.m.-5:45 p.m.
Fri. & Sat. 10:00 a.m.-7:45 p.m.
The Junior Shop
Mon.-Fri. 10:00 a.m.-4:45 p.m.
Sat. & Sun. 10:00 a.m.-5:45 p.m.
The Museum Library
Tues.-Fri. 11:00 a.m.-4:00 p.m.
Diner Saurus Fast Service Eatery
Daily 11:00 a.m.-4:45 p.m.
Garden Cafe
Reservations: (212) 769-5865
Lunch: Mon.-Fri. 11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat. 5:30-7:30 p.m.
Brunch: Sat. & Sun. 11:00 a.m.-4:00 p.m.
Whale's Lair
Fri. 3:00-8:00 p.m.
Sat. Noon-8:00 p.m.
Sun. & most holidays Noon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)
Sat. & Sun. 11:00 a.m.-4:00 p.m.
The Discovery Room
Closed in September; re-opens October 2.
The Natural Science Center
Closed in September; re-opens October 1.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and

Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax

The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth. Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily. Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at 12:30, 2:30, and 4:30 p.m.

On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical Rain Forest. Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members):
Adults: \$4 single feature; \$5.50 double feature
Children: \$2 single feature; \$3 double feature

Birthday Parties

Theme parties for young Members 5-10 years old are two hours long and held at 3:30 p.m. on Wednesdays, at 4:00 p.m. on Fridays, and at 11:00 a.m. or 2:30 p.m. on weekends. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769-5606 for further information.

Parking

The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first-come, first-served basis; fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from

9:30 a.m. to midnight on Friday and Saturday. Call the Membership Office at (212) 769-5606 for information about alternative parking.

Museum Tours

Free Museum Highlights Tours are available to individuals and families. Tours are conducted daily at 10:15 and 11:15 a.m., 1:15, 2:15, and 3:15 p.m. Free Spotlight Tours are also available to individuals and families. See page 16 for further information.

Group Tours are available for a fee. All Group Tours must be scheduled through the Volunteer Office. For details, call (212) 769-5566.

Discover

Explore our
**Naturemax
Dinner Theater Package**

See our latest feature

Antarctica

Includes a complete dinner entree,
appetizer or dessert and coffee

per person **\$21.00**

Hours

Lunch, Mon.-Fri. 11:30-3:30
Saturday and Sunday Brunch, 11:00-4:00
Dinner seating, Fri. Sat. 5:00-7:30
For Reservations call 212 769 5865

GARDEN CAFE

Sun Mon Tue Wed Thu Fri Sat

September 1993

American Museum of Natural History

5 Labor Day. The Museum is open

Spotlight Tours

The Volunteer Office offers a series of free Spotlight Tours, which are conducted by professionally trained Volunteer Highlights Tour guides. The tours are listed throughout the calendar, and topics are subject to change. For additional information about the tours, which depart from the second floor between the Roosevelt Rotunda and the Hall of African Mammals, call (212) 769-5566.

1 7:00 p.m. Biosphere 2.
The Human Experiment. Members' evening program. Kaufmann Theater. \$8 for Members, \$12 for non-Members. Page 5.

2 1:45 p.m. Spotlight
Tour: Siberia. Free

3

4



10 7:00 p.m. Members' Trip to Block Island.
Tickets required. Page 2.

11 3:45 p.m. Spotlight Tour:
Native American Cultures. Free.

12 11:00 a.m. and 1:00 p.m. Beaux-Arts Buildings of New York. Members' walking tours. **SOLD OUT.**

2:45 p.m. Spotlight Tour: Antarctica. Free

Last chance to see *The Dinosaurs of Jurassic Park* in Gallery 3.



14 12:45 p.m. Spotlight Tour: Dog Lovers' Tour. Free.

7:00 p.m. Ghosts of Cape Horn and Whales Weep. Not. Members' evening with James Donaldson. Kaufmann Theater. Free for Members, \$8 for non-Members. Page 2.

7:30 p.m. Linnaean Society of NY. Linder Theater. Free.

8 2:45 p.m. Spotlight Tour: African Safari. Free.

6:30 p.m. NY Mineralogical Club. Room 319. Free.

7:00 p.m. Stanford White's New York. Members' evening program. Kaufmann Theater. \$6 for Members, \$10 for non-Members. Page 2

15 1:45 p.m. Spotlight Tour: Pre-Columbian Treasures. Free.

Rosh Hashanah begins at sundown



17

18 1:45 p.m. Spotlight Tour
Evolution. Free

19 10:30 a.m. and 1:30 p.m. USS Enterprise Retrofit. Members' adult-child workshop. Tickets required. Page 5.

20 2:45 p.m. Spotlight Tour: Art Museum? Museum Art? Free

21



22 5:30 p.m. Under-standing Geology. Members' workshop (part 1 of 2). Tickets required. Page 4.

23 2:45 p.m. Spotlight Tour: Meteorites. Free

7:00 p.m. Strange New Worlds: Star Trek and the Sixties. Members' evening program. Kaufmann Theater. \$6 for Members, \$9 for non-Members. Page 1

24 Yom Kippur begins at sundown.

25 11:00 a.m. NY Map Society. Room 319. Free

Learn and Teach Origami

In these special classes for volunteers, origami specialist Michael Shall will instruct beginners in the art of folding. Students start with simple models like the swan, sailboat, and jumping frog and progress to more complicated models like the flapping bird and omega star.

The sessions will be conducted from 6:30 to 8:30 p.m. on six Wednesdays: September 8, 22, and 29, October 6, 13, and 20.

Please note that the classes are progressive: each lesson builds upon teachings from the previous class.

The classes are free, with all materials provided. In exchange, students are expected to repay the 12 class hours as origami volunteers, helping teach at the annual Origami Holiday Tree as well as the spring and summer origami tables. The teaching tables are staffed at all times during Museum hours in the holiday season, including weekends and evenings.

To register for the origami classes for volunteers, please call (212) 769-5566

26 2:00 p.m. NY Shell Club. Blum Lecture Room. Free.

2:00 p.m. NY Paleontological Society. Room 319. Free

Too Much Mail?

The Membership Office recently mailed a letter to prospective Members asking them to join the Museum. In spite of our best efforts to remove the names of our current Members from this mailing, you may have received one of these letters. Please accept our apology. Would you consider passing the letter on to a friend? Your help in reaching new Members is greatly appreciated

28 7:30 p.m. Linnaean Society of NY. Linder Theater. Free

29 5:30 p.m. Under-standing Geology (part 2 of 2). Tickets required. Page 4.

30 7:00 p.m. From Parlor to Politics
Members' evening program. Kaufmann Theater. \$6 for Members, \$9 for non-Members. Page 3

7:30 p.m. Microscopical Society. Room 319. Free

NOTTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol. 18, No. 9 October 1993



*A new exhibition recaptures
the natural wonders of
Antarctica and traces the
history of human explorations
of the continent.*

Antarctica

Exhibition opens in Gallery 3 on October 22

Members' preview:
Wednesday, October 20, 4:00–7:00 p.m.,
and private viewing at Naturemax, 7:30 p.m.

The world's greatest mysteries lie at the bottom of the globe. Until 1821 no one had ever seen Antarctica, and it took over a century for a few determined explorers, pioneers, and scientists to truly put Terra Australis Incognita (the Unknown Southern Land) on the map. Nobody owns Antarctica — it is not a country or a province or a territory, and there are no natives. Everyone who visits is a foreigner, and the nations that undertake scientific work there act jointly to oversee all the continent's activities

And what have they found? The new exhibition *Antarctica* profiles the region's wildlife and its human visitors, revealing the effects humans have had on the global environment and the scientific, political, and economic choices that will shape Antarctica's future. Exhibits include penguin dioramas, a mummified seal, video programs, three-dimensional models of ice features, and tools used by people who have lived and worked on the continent

Members can attend a preview of

the exhibition on Wednesday, October 20, from 4:00 to 7:00 p.m. At 7:30 p.m. there will be a special showing of the Naturemax film *Antarctica*. The continent's icy expanses are dramatically recaptured on the Naturemax Theater's four-story high, 66-foot-wide screen in the IMAX format, which uses film ten times the size of conventional 35mm film. Viewers take a spectacular ride through icy chasms and over towering glacial peaks and dive through six feet of ice to explore the underwater cav-

erns of a glacier. Sidney Horenstein, the Museum's coordinator of environmental public programs and resident curator for the exhibition, will offer a ten-minute introduction and slide show before the film, which is 42 minutes long

The preview is free and open only to Participating and Higher Members; your valid membership card is your ticket of admission. Tickets for the private viewing at Naturemax are \$5; use the October Members' programs coupon on page 3 to order tickets

Ghost Stories

Friday, October 29
Kaufmann Theater
Family program (ages 5-12): 6:00 p.m.
\$5 for Members, \$8 for non-Members
Adults' program: 8:00 p.m.
\$8 for Members, \$12 for non-Members

Legends, myths, and true-life adventures are the fabric from which storyteller Laura Simms weaves her tales of enchantment. She's been among the Museum's most popular performers since 1968, and her Halloween shows are a longstanding Museum tradition.

One of America's foremost

performers and students of world folklore, Simms has been hailed as a major force in the renaissance of storytelling in the United States. She has developed a vast repertoire of traditional tales from Africa, Asia, Europe, and the Americas, many of which she heard from Tibetan Buddhist lamas, Maori elders,

and Native American storytellers as well as classical and modern Western theater artists. Through careful adaptation and interpretation, Simms conveys the timeless beauty and meaning of these stories.

Use the October Members' programs coupon on page 3 to register for the programs.

Members' Rug-Hooking Workshops

Fridays, October 15 and 22

Get hooked on a new hobby with June Myles, who'll show you how to create one-of-a-kind collectibles, from pillows to room-size rugs. At this two-part workshop you'll start with a very small project, and we'll provide all the materials (except the scissors) to complete it. In the first session you'll learn the basics and then you'll

learn a variety of techniques to finish the piece.

The workshops will take place on two Fridays, October 15 and 22, from 6:30 to 8:00 p.m. Tickets are \$40 and available only to Participating and Higher Members ages 16 and older. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

DNA Analysis

Thursday, October 14

Museum scientists made history recently when they extracted some of the oldest DNA ever recovered from a fossil. A 30-million-year-old termite encased in amber was their subject, and they amplified and sequenced its DNA. (No, they have no plans to use their findings to resurrect dinosaurs.)

Assistant curator Ward Wheeler will discuss this project and others currently under way in the Museum's Molecular Systematics Laboratory. He'll describe the lab, where researchers study the DNA of living and extinct animals to trace patterns of evolution, and talk about the ways in which Museum re-

searchers from different disciplines are working together to refine and redefine concepts of evolutionary history.

The program will take place on Thursday, October 14, at 7:00 p.m. in the Kaufmann Theater. Tickets are free for Members and \$8 for non-Members; use the coupon on page 3 to register.

War of the Worlds

Saturday, October 23

On the night before Halloween in 1938 thousands of horrified Americans listened to an account of a Martian invasion in which aliens landed in New Jersey and annihilated everything in their path. Their panic arose from Orson Welles' all-too-realistic radio broadcast of the H. G. Wells science-fiction thriller *War of the Worlds*.

Brian Sullivan, the Planetarium's designer of special

effects, will commemorate the notorious event with a screening of 1953's *War of the Worlds*. Sullivan will introduce the film, which won an Oscar for best special effects, and answer questions afterward. The show will take place on Saturday, October 23, at 4:00 p.m. in the Linder Theater. Use the coupon on page 3 to order tickets, which are \$6 for Members and \$9 for non-Members.

Members' Day Trip to Hawk Mountain

Saturday, October 16

Join naturalist Stephen C. Quinn, a Museum authority on birds, for an autumn day of birdwatching at Pennsylvania's Hawk Mountain in the eastern Appalachians. Thousands of migrating hawks and other birds of prey pass

through the area after leaving their breeding grounds in Canada and the northern states, and participants will hike around the mountain to observe the raptors.

The trip will take place on Saturday, October 16, from

7:00 a.m. to 7:00 p.m. Tickets are \$60 and available only to Participating and Higher Members ages 13 and up. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Hudson River Cruise

Saturday, October 2

Cruise up to West Point and back aboard a catamaran for magnificent views of the Hudson Highlands' fall foliage. Sidney Horenstein, the Museum's coordinator of environmental public programs, will point out highlights of the landscape and aspects of geological interest, and William Schuster, the director of the Black Rock Forest Consortium, will talk

about local plant life and the relationship of Black Rock Forest to the rest of the Hudson Highlands.

The trip will take place on Saturday, October 2, from noon to 4:00 p.m. Tickets are \$50 for Members and \$60 for non-Members and available only to participants ages 13 and older. Call (212) 769-5606 for information about ticket availability.

Forbidden Journey

The Life of Alexandra David-Neel

Sunday, October 24

Explorer, opera singer, feminist, and internationally acclaimed writer — Alexandra David-Neel led a life filled with adventure, honor, intrigue, and fame. The French author is perhaps best known for her 1924 expedition to Lhasa, Tibet, when she disguised herself as a beggar to become the first foreign

woman ever to enter the forbidden city.

Barbara Foster, an assistant professor at Hunter College, and her husband, Michael Foster, will present a lively account of David-Neel's life at a special Members' program. The Fosters are the authors of David-Neel's biography, *Forbidden Journey*

(Harper/San Francisco, 1989), and their presentation on Sunday, October 24, will coincide with the 125th anniversary of David-Neel's birth. The program will start at 3:00 p.m. in the Kaufmann Theater. Tickets are \$6 for Members and \$9 for non-Members. Use the coupon on page 3 to register.

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 9
 October 1993

Donna Bell — Editor
 Sheila Greenberg — Manager of Membership Services
 Angela Soccodato — Designer
 Rita Campon — Copy Editor
 Peter Zelaya — Fulfillment Coordinator
 Risa Miller — Program Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to: *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Printed by Waldon Press, Inc. New York

Behind-the-Scenes Tours of the

Department of Herpetology and Ichthyology

Saturday, October 30, and Thursday, November 4

Museum scientists will show Members some of the institution's collections of fishes, amphibians, and reptiles, and they'll talk about how these specimens are gathered in the field and prepared for the collections. Participants will visit laboratories and other areas in the Department of Herpetology and Ichthyology

to hear about the use of dermestid beetles in preparing skeletons and the value of alcohol-preserved specimens. They'll use microscopes to take a close-up look at specimens and observe live displays of some of the Museum's resident fish.

The tours, which last about one hour, will take place on

Saturday, October 30, between 10:00 a.m. and 4:00 p.m. and Thursday, November 4, from 5:00 to 9:00 p.m. Tickets are \$12 and available only to Participating and Higher Members ages 13 and older. Use the coupon on page 3 to register for tours, which have limited availability.

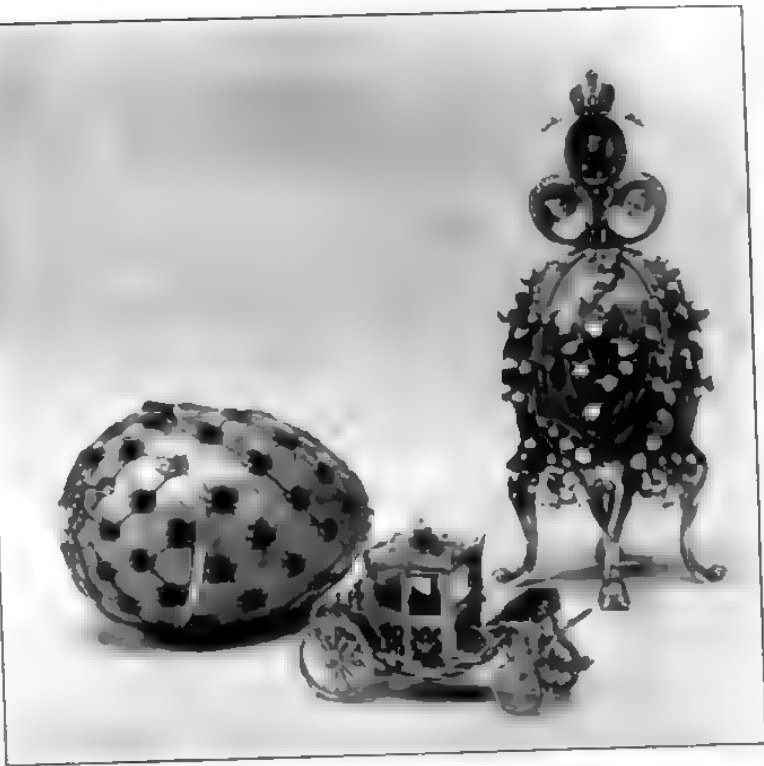
The Forbes Magazine Collection of Fabergé

Tuesday, November 23
7:00 p.m.
Kaufmann Theater
\$6 for Members, \$9 for non-Members

A third-generation Russian of French descent, Peter Carl Fabergé (1846-1920) catered to the appetites of the wealthy for unusual jewelry and luxury items. He is perhaps best known for his Imperial Easter Eggs, created for the last two czars.

An even dozen of the eggs — two more than those of the Kremlin's Armory Museum — are among the objets d'art in the *Forbes* magazine's collection of Fabergé, much of which is on permanent display at the *Forbes* Magazine Galleries in New York City. The collection was started in the 1960s by publisher Malcolm Forbes and consists of an assortment of Fabergé boxes, frames, clocks, and fantasies.

Mary Ellen Sinko, curator of the *Forbes* magazine collection, will give an illustrated lecture on the Fabergé treasures. She'll discuss the collection's beginnings, the



Coronation Egg (left) holds a replica of the Czarina's coach and Lilies of the Valley Egg contains miniatures of the Czar and daughters.

history of the House of Fabergé, and the role of imperial patronage in Fabergé's career. She'll describe highlights from the collection that exemplify the variety of tech-

niques used by the court jeweler and the techniques of his workmasters

To register, please use the October Members' programs coupon.

October Members' Programs Coupon

Name _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: October Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Telephone reservations are not accepted. No refunds or exchanges.** Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

DNA Analysis. Thursday, October 14, 7:00 p.m.

Number of free Members' tickets _____

(no more than 2, please)

Number of additional Members' tickets at \$5 _____

Number of non-Members' tickets at \$8 _____

Total amount enclosed for program _____

Members' private viewing of Antarctica

Wednesday, October 20, 7:30 p.m.

Number of Members' tickets at \$5 _____

Total amount enclosed for program _____

War of the Worlds Saturday, October 23, 4:00 p.m.

Number of Members' tickets at \$6 _____

Number of additional tickets at \$9 _____

Total amount enclosed for program: _____

Forbidden Journey. Sunday, October 24, 3:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$9: _____

Total amount enclosed for program: _____

Ghost Stories. Friday, October 29

Family program, 6:00 p.m.

Number of Members' tickets at \$5 _____

Number of additional tickets at \$8 _____

Total amount enclosed for program: _____

Adults' program, 8:00 p.m.

Number of Members' tickets at \$8: _____

Number of additional tickets at \$12 _____

Total amount enclosed for program _____

Chemistry for Kids. Saturday, November 6.

Please indicate a first, second, and third choice of times

____ 11:00 a.m. ____ 1:00 p.m. ____ 3:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$10: _____

Total amount enclosed for program: _____

Members' private viewing of Star Trek

Tuesday, November 9, 6:00 p.m.

Number of Members' tickets at \$7: _____

Total amount enclosed for program: _____

The Forbes Magazine Collection of Fabergé

Tuesday, November 23, 7:00 p.m.

Number of Members' tickets at \$6: _____

Number of additional tickets at \$9: _____

Total amount enclosed for program: _____

Gorillas in the Mist. Tuesday, November 30, 7:00 p.m.

Number of Members' tickets at \$8: _____

Number of additional tickets at \$12: _____

Total amount enclosed for program: _____

Behind-the-Scenes Tours of the Department of Herpetology and Ichthyology. \$12, and open only to Participating and Higher Members. Tours will leave at 15 minute intervals and last about an hour. We will send you confirmation by mail indicating the exact time your tour will start.

Please indicate a first, second, and third choice

____ Saturday, October 30, between 10:30 a.m. and noon

____ Saturday, October 30, between 1:15 and 2:30 p.m.

____ Thursday, November 4, between 5:00 and 5:45 p.m.

____ Thursday, November 4, between 6:30 and 7:30 p.m.

Number of tickets at \$12: _____

Total amount enclosed for program: _____

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

Chemistry for Kids

Saturday, November 6
11:00 a.m., 1:00 and 3:00 p.m.
Kaufmann Theater
\$6 for Members, \$10 for non-Members
Ages 5-12
All attendees must have tickets

Young Members will see onstage chemical magic and then create some of their own at the eighth annual presentation of *Chemistry for Kids*. Patricia Ann Redden will demonstrate some fabulous chemical transformations in the Kaufmann Theater — demonstrations that are designed to excite young people with the possibilities offered by the study of science.

Then kids will go to the Edith C. Blum Lecture Room

to conduct safe, easy-to-understand experiments of their own under adult supervision. Those who complete the lab session will earn a Junior Chemist certificate issued by the American Chemical Society's New York Section and the American Museum. Participants who successfully complete a chemistry quiz based on Museum exhibits can win prizes.

Redden is a professor of chemistry and departmental chairperson at Saint Peter's

College in Jersey City. She has had many years of teaching experience at all grade levels and frequently addresses high school and college science classes in the New York area.

Chemistry for Kids is presented in conjunction with the American Chemical Society's observation of National Chemistry Week. Use the October Members' programs coupon to register, and please note that both children and adults must have tickets

Field Class in Bird ID in Central Park

Tuesdays, 7:00-9:00 a.m.
October 5, 12, 19, and 26

Thursdays, 9:00-11:00 a.m.
October 7, 14, 21, and 28

Join naturalists Stephen C. Quinn (on Tuesday) and Harold Feinberg (on Thursday) in observing the fall migration of birds through Central Park. Participants will learn how to identify species

according to their field marks, habitat, behavior, and song.

The fee for the program is \$5, to be paid to the instructor each morning before the walk starts. There is no pre-registration. Classes meet

across from the Museum on the northeast corner of Central Park West and 77th Street.

For further information call the Education Department at (212) 769-5310

Gorillas in the Mist: The True Story

Tuesday, November 30
7:00 p.m.
Main Auditorium
\$8 for Members, \$12 for non-Members



Redmond grooming Pablo, a young silverback. The two have known each other since Pablo's infancy.

Before they met Dian Fossey, Rwanda's mountain gorillas knew their cousins from the genus *Homo* almost solely as killers and habitat destroyers. Fossey's two decades of study and conservation among the gorillas ended with her 1985 murder. Ian Redmond, a longtime colleague and friend of Fossey's, will talk with Members about her life, her philosophy of conservation, and the fu-

ture of the 250 remaining great apes — the friends that she almost certainly saved from extinction.

Fossey began her fieldwork in 1967 with the establishment of the Karisoke Research Centre in the Virunga Volcanoes region of Rwanda. All previous gorilla studies had been made at a distance, since at close quarters gorillas are afraid of humans (and vice versa). Her

greatest breakthrough came with her understanding of gorilla etiquette: by imitating their feeding and contentment vocalizations, grooming herself, and keeping a low profile (while ignoring any bluff charges from the group leader), she came to be accepted by the gorillas as a harmless presence. Once relaxed, the study groups revealed many aspects of their daily behavior that had eluded other observers. The most fascinating results came in the long term as the life histories of individual gorillas unfolded.

A wildlife biologist, photographer, and writer, Redmond has studied cave elephants in Kenya and reptiles and amphibians in Papua New Guinea. He introduced David Attenborough to a gorilla family during the filming of a memorable *Life on Earth* episode and taught Sigourney Weaver how to grunt like a gorilla for her 1987 portrait of Fossey in a film biography.

Redmond worked at Karisoke as Fossey's research assistant from 1976 to 1978; in 1980 he worked for the Mountain Gorilla Project and in the following year he took part in a census of the Virunga gorillas. His Members' program will feature reminiscences of his work with Fossey and review conservation successes and failures in the region, including a discussion of the effects of Rwanda's civil war.

Use the coupon on page 3 to register for the program.

Members' Private Viewing

Star Trek® Exhibition

Tuesday, November 9
6:00 p.m. Exhibition Viewing
7:00 p.m. Sky Show
\$7, and open only to Participating and Higher Members

Millions of viewers all over the planet have enjoyed the original *Star Trek*® television series since its 1966 premiere. The images of Captain Kirk (William Shatner), Mr. Spock (Leonard Nimoy), Lieutenant Uhura (Nichelle Nichols), and other crewmembers of the USS *Enterprise* are more familiar to fans than those of actual astronauts.

Trekkers can satisfy their appetites for nostalgia at the Hayden Planetarium, where the *Star Trek*® Retrospective Exhibition is on display. The exhibition, which was coordinated by the National Air and Space Museum, features Starfleet uniforms, annotated scripts, and other props from the show. The exhibits are organized thematically, exploring the ways in which the series reflected American sensibilities in the 1960s.

Members can attend a private viewing of the exhibition followed by a special showing of the current Sky Show, *Orion Rendezvous: A Star Trek® Voyage of Discovery*. Actor LeVar Burton — alias Lieutenant Commander Geordi La Forge of *Star Trek®: The Next Generation* — narrates a cosmic journey into the twenty-fourth century in which viewers observe places where six suns blaze and explore where stars are born and die.

The Planetarium will open at 6:00 p.m. on Tuesday, November 9, for the Members' viewing of the exhibition. The Sky Show will start at 7:00 p.m., and afterward the exhibition will remain open until everyone has had the opportunity to see it. Use the October Members' programs coupon on page 3 to register.

Members' Day Trip to the

Shinnecock Reservation

Saturday, November 13
9:00 a.m.-6:00 p.m.
\$50, and open only to Participating and Higher Members
Ages 13 and up

After the arrival of English colonists on Long Island local Indians were quickly displaced and many tribes, such as the Corchaugs on the island's North Fork, simply disappeared. The Shinnecock Indians endured, and today about 200 of their descendants occupy a wooded tract of land on Shinnecock Bay in

Southampton Village. Members can observe the ways in which the Shinnecock have kept their culture alive on a tour of their reservation.

Participants will travel by bus from the Museum to the reservation. A guide will welcome visitors and introduce the reservation and its history with tours of the community

center and church. A member of the tribe will discuss Shinnecock culture and answer questions. Afterward, Members will be served a meal that features foods popular among native peoples.

Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Dino-Mite Dinner Deal!

Prime Rib Dinner
with potatoes and vegetables
\$10⁹⁵

Every Friday and Saturday, 5:00-7:30 pm

Naturemax Dinner Theater Package
Includes a complete dinner entree, appetizer or dessert and coffee, per person **\$21⁰⁰**

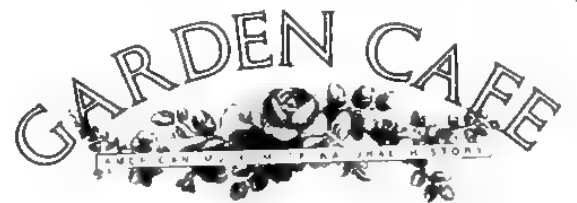
Hours

Lunch, Mon.-Fri: 11:30 - 3:30

Saturday and Sunday Brunch: 11:00 - 4:00

Dinner seating, Fri.-Sat: 5:00 - 7:30

For Reservations call 212-874-3436



Members' Walking Tour of

Van Cortlandt Park

Sunday, November 7
10:30 a.m., noon, and 1:30 p.m.
\$16, and open only to Participating and Higher Members
Ages 13 and up

Geologist Sidney Horenstein will accompany Members on an exploration of one of the city's biggest recreation areas. Horenstein, the Museum's coordinator of environmental public programs, will point out some of Van Cortlandt Park's historical features and describe how its

geological formations influence the park's topography.

Participants will stroll along part of the Putnam division's now-abandoned railroad line, observe the exterior of the 1748 Van Cortlandt mansion, and climb to the top of Vault Hill to see where some of New York City's docu-

ments were hidden from British invaders during the Revolutionary War. Horenstein will talk with Members about the origins of the park's lake and those of the park's mystery monuments.

Use the coupon on page 5 to order tickets, which are available only by mail order.

Members' Adult-Child Workshop

Feast of Clay

Sunday, November 21
10:30 a.m.-noon and 1:30-3:00 p.m.
\$26 per couple, and open only to Participating and Higher Members
Ages 5-9

The pilgrims celebrated their first harvest with a banquet, and we commemorate their Thanksgiving every year with turkey and all the trimmings. This year you can delight your family and friends with table ornaments of your own creation. Like the pilgrims, you'll be working with a product from the earth: self-hardening clay. Join June Myles to fashion

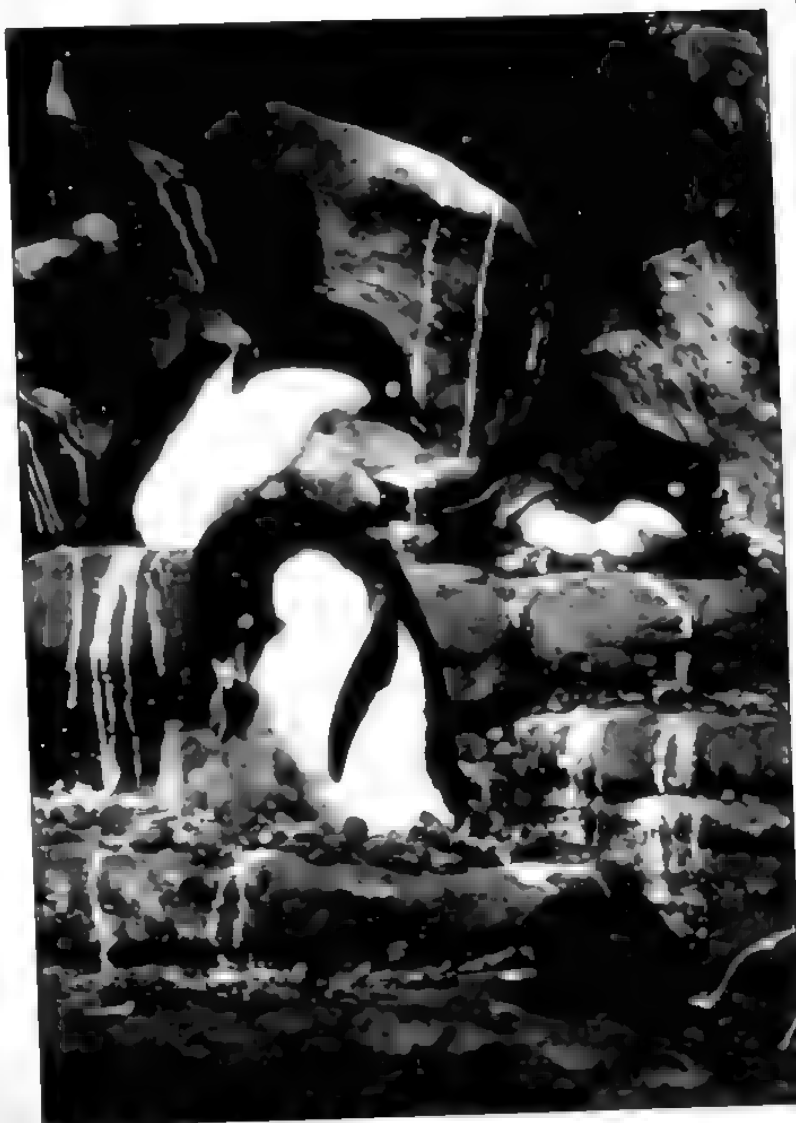
individual favors for your guests, seasonal candle holders, or a centerpiece for the table. If you're not cooking this year, perhaps your taste will run toward a whimsical plate of leftovers (guaranteed fat- and salt-free and definitely noncaloric).

Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Members' Guided Tours of

Antarctica

Friday, November 12
4:00, 5:30, and 7:00 p.m.
Free, and open only to Participating and Higher Members



Members can explore the new Gallery 3 exhibition in the company of professionally trained Volunteer Highlights Tour guides, who'll discuss Antarctica's fascinating displays, from explorations of the region's atmospheric phenomena to its role in global warming. Participants will also view some of the Museum's permanent exhibitions that relate to the continent.

The tours last about an hour and are not recommended for children under 13. Use the coupon below to register, and please note that tickets are available only by mail.



Antarctica Expedition

From January 3 through 25, Discovery Cruises will follow in the wake of early explorers and adventurers on one of its most exciting natural history adventures to date: *Icebreaker Expedition to Antarctica and South Georgia Island*.

This will be Discovery Cruises' eighth journey to Antarctica. Tourists will cruise the ice-choked channels of the Antarctic Peninsula as they head south of the Antarctic Circle to Stonington

Island, home of the first US research base on the continent. They'll spend several days in the Weddell Sea, looking for the rarely seen emperor penguin. Other highlights include stops at the South Orkney Islands, South Georgia and its impressive concentration of seals, penguins, and four species of albatross, and the Falklands.

The powerful, polar-class icebreaker *Kapitan Khlebnikov* will take participants to places that are seldom visited

by passenger expeditions. The two on-board helicopters permit access to remote island destinations and allow aerial surveys of icebergs and glaciers. A fleet of Zodiac landing craft can quickly put passengers ashore wherever there is open water, and an extraordinary team of Museum lecturers and naturalists will provide an in-depth educational program.

For further information, call (212) 769-5700 (outside New York State: 800-462-8687)

Antarctica Lecture Series

Five Wednesdays, starting October 27
7:00-8:00 p.m.
Kaufmann Theater
Series tickets: \$20 for Members,
\$25 for non-Members

American Museum scientists who have been to Antarctica will discuss the continent at a series of slide-illustrated lectures. They'll discuss glaciers and climate changes, penguins and other birds, dinosaurs and drifting continents, the ozone hole, global warming and the nature of the upper atmosphere, and the continent's treasure trove of meteorites. This series is presented in conjunction with the upcoming Gallery 3 exhibition (see page 1 for details)

October 27. *Antarctica Ice and the Rocks Beneath* Michael Novacek, vice president and dean of science

November 3: *Antarctic Treasures from Space — Meteorites*. Martin Prinz, curator, Department of Mineral Sciences

November 10: *Antarctica Its Weather; the Ozone Hole, the Nature of the*

Upper Atmosphere to the Edge of the Universe William A. Gutsch, Jr., chairman and associate astronomer at the Hayden Planetarium

November 17: *Penguins and Other Antarctic Birds* George F. Barrowclough, chairman and associate curator, Department of Ornithology

December 1: *Antarctic Dinosaurs and Drifting Continents* Mark Norell, curator, Department of Vertebrate Paleontology

To register, make your check payable to the American Museum of Natural History and mail with a self-addressed, stamped envelope to: Antarctica, Attn. Sidney Horenstein, coordinator of environmental public programs, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192

Membership Workshops and Tours. Use this coupon to register for *Hawk Mountain, Rug Hooking, and Day Trip to Shinnecock Reservation*. Indicate a first, second, and third choice of times to register for *Guided Tours of Antarctica* and *Walking Tours of Van Cortlandt Park* and a first and second choice of times for *Clay Workshops*

Name(s) of program(s): _____

Number of tickets and price (please indicate which program if more than one): _____

Total amount enclosed _____

Name _____

Address: _____

City _____ State: _____ Zip _____

Daytime telephone: _____

Membership category _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Workshops and Tours*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 5192

Cuba: Nature of an Island

On display in the Akeley Gallery

Islands are special places for natural history — they're blessed with unique plants and animals, but their native species are prone to extinction. A research team of scientists from the American Museum and the Museo Na-

cional de Historia Natural in Havana have explored Cuba's remarkable flora and fauna together since 1989.

The new exhibition *Cuba: Nature of an Island* features photographs and specimens that illustrate some of the

results of this unusual joint project. Among the scientists' discoveries are the remains of a previously unknown species of monkey that may have died out after humans colonized Cuba at least 7,000 years ago. They also found

the earliest fossils of a land mammal ever unearthed in the West Indies. The 16-million-year-old fossils are from a sloth, a relative of the two-toed tree sloth of South America.

The exhibition, which fea-

tures bilingual text, is on display in the Akeley Gallery through January 3. Afterward *Cuba: Nature of an Island* will go on permanent display in the Museo Nacional de Historia Natural in Havana.

Fall Lecture Series

Explore the mysteries of human origins, search for Solomon's mines, and discover the geological marvels of the solar system at the 1993 Fall Lecture Series, sponsored by the Education Department

Speakers include Robert Eisenman, who will present *Mystery, Research, and the Dead Sea Scrolls*, and Jared M. Diamond, whose topic is *Our Disastrous Past*. Joseph J. Peters of the Department of Mineral Sciences will offer *Minerals, Myths, and Magic*, and geologist Sidney Horen-

stein will present *The Geology of the Planets*

In addition, animal expert Andrew Simmons will host a lively family program, *Wildlife Conservation: Predators, Prey, and Habitats*. The programs — featuring live wild animals such as carnivorous reptiles and birds of prey — will be repeated on four Saturdays and Sundays, beginning October 23, at 11:00 a.m. and 1:00 p.m.

For further information call (212) 769-5310, Monday through Friday from 9:00 a.m. to 5:00 p.m.

1993 Margaret Mead Film Festival

Monday, October 4 – Sunday, October 10

A fascinating assortment of anthropology films from around the world are featured in the 1993 Margaret Mead Film Festival. For a complete schedule of films and videos call (212) 769-5305.

The festival hours are from 6:30 to 10:30 p.m. on Monday, October 4, through Thursday, October 7; from 11:00 a.m. to 8:30 p.m. on Saturday, October 9; and from 11:00 a.m. to 5:00

p.m. on Sunday, October 10. Daily tickets, which go on sale at 5:00 p.m. on weekdays and at 10:30 a.m. on weekends, are \$7 for Members and \$8 for non-Members and are not sold in advance. A ticket does not guarantee admission to the film of your choice; all seating is on a first-come, first-served basis. A festival pass (valid October 4–10) is \$36 for Members and \$40 for non-Members.

Striped Bass Tag and Release in NY Harbor

Friday, November 26

Friends of Fishes and the Hudson River Foundation present the second annual day-after-Thanksgiving outing at which participants will catch, tag, and release striped bass.

At 8:30 a.m., on Friday, November 26, anglers will board the *Miss Elizabeth* at South Street Seaport. A first-class fishing vessel with a heated cabin, the *Miss Elizabeth* is captained by Joe Pelowski. Participants will be accompanied by John Waldman of the Hudson River Foundation, curators from the Department of Ichthyology, Friends of Fishes scientific

adviser Tom Lake, Captain Joe Shastay, and baykeeper Andy Wilner. Soup, sandwiches, beer, wine and cheeses, fruit, and sweets will be served, and all fishing gear will be provided.

For additional information call Friends of Fishes at (212) 289-3605 or fax (212) 360-6625. To register, make your check for \$60 payable to Friends of Fishes/AMNH and mail with a self-addressed, stamped envelope to: Friends of Fishes, Department of Ichthyology, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192

The Mack Lipkin Man and Nature Lectures

Speaker: Geologist Frank H.T. Rhodes

Charles Darwin's Portrait of a Small Planet and Charles Darwin's Portrait of a Large Primate

Monday, October 25, and Tuesday, October 26
7:00 p.m., Main Auditorium
Both lectures: \$10 for Members, \$20 for non-Members
Single lecture: \$5 for Members, \$10 for non-Members

Frank H.T. Rhodes, the president of Cornell University, will present this year's Mack Lipkin Man and Nature Lectures. A geologist by training, Rhodes holds the faculty rank of professor of geology at Cornell. In addition to his doctorates in philosophy and science, he holds honorary degrees from more than 20 institutions. His numerous awards include the Geological Society's Daniel Pidgeon Fund, Lyell Fund, and Bigsby Medal.

In 1987 Rhodes was appointed by President Reagan to the National Science Board, and in 1989 he was appointed by President Bush to the President's Education Policy Advisory Committee. The author of more than 70 major scientific articles and monographs and 60 articles on education, Rhodes' books include *The Evolution of Life, Fossils, and Language of the Earth*.

The lectures will begin on Monday, October 25, with *Charles Darwin's Portrait of a Small Planet*. Darwin's early scientific vocation was geology, and his voyage aboard the *Beagle* (1831–36) coincided with the publication of Charles Lyell's *Principles of Geology*. Armed with Lyell's methodology, Darwin devoted himself to the study of the earth, based on his "conviction that some great law of nature remains to be discovered by geologists" (Darwin, unpublished note).

The lecture recounts Darwin's early life and explains the devotion of his early scientific career to the search for this law. Rhodes will discuss the centrality of the *Beagle* explorations to Darwin's other work, including his studies of the age and development of the earth, the history of life, the significance of volcanoes, coral reefs,

ocean-deeps, and mountain chains. The unique portrait of the planet that Darwin created represented the first attempt to design a model of the mechanism by which the earth "works." Darwin's theories about the earth were the foundation for his later theory of evolution and the source of fundamental questions about nature and natural law.

The second lecture, *Charles Darwin's Portrait of a Large Primate*, will take place on Tuesday, October 26. Rhodes will examine Darwin's mature career and his growing conviction that species developed through

evolution driven by natural selection. The scientist's early reticence in addressing the place of humankind in the evolutionary scheme will be addressed, along with the influence of studies of human origins and characteristics by Huxley, Lyell, and Wallace. The great evolutionary debates of the nineteenth century will be reviewed and linked to contemporary concerns about human nature, human values, and human destiny.

Use the coupon below to register for the lectures, and for further information call (212) 769-5019.

Mack Lipkin Man and Nature Lectures. Please indicate single or both lectures.

___ Mon., Oct. 25, and Tues., Oct. 26
Number of Members' tickets at \$10: ___
Number of non-Members' tickets at \$20: ___
Total amount enclosed for program: ___

___ Mon., Oct. 25, only
Number of Members' tickets at \$5: ___
Number of non-Members' tickets at \$10: ___
Total amount enclosed for program: ___

___ Tues., Oct. 26, only
Number of Members' tickets at \$5: ___
Number of non-Members' tickets at \$10: ___
Total amount enclosed for program: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: Man and Nature, Office of Special Events, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Museum Notes

Hours

Exhibition Halls	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-8:45 p.m.
The Museum Shop	
Mon.-Thurs. & Sun.	10:00 a.m.-5:45 p.m.
Fri. & Sat.	10:00 a.m.-7:45 p.m.
The Junior Shop	
Mon.-Fri.	10:00 a.m.-4:45 p.m.
Sat. & Sun.	10:00 a.m.-5:45 p.m.
The Museum Library	
Tues.-Fri.	11:00 a.m.-4:00 p.m.
The Discovery Room	
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10. Children must be accompanied by an adult. Closed on holidays and weekdays.	
Sat. & Sun.	Noon-4:30 p.m.
The Natural Science Center	
For children of all ages and their families. Closed on Mondays and holidays.	
Tues.-Fri.	10:30 a.m.-12:30 p.m. and 2:00-4:30 p.m.
Sat. & Sun.	1:00-4:30 p.m.

Museum Dining

Diner Saurus Fast Service Eatery	
Daily	11:00 a.m.-4:45 p.m.
Garden Cafe	
Reservations: (212) 769-5865	
Lunch: Mon.-Fri.	11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.	5:30-7:30 p.m.
Brunch: Sat. & Sun.	11:00 a.m.-4:00 p.m.

Whale's Lair

Fri.	3:00-8:00 p.m.
Sat.	Noon-8:00 p.m.
Sun. & most holidays	Noon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)	
Sat. & Sun.	11:00 a.m.-4:00 p.m.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Naturemax

The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth.

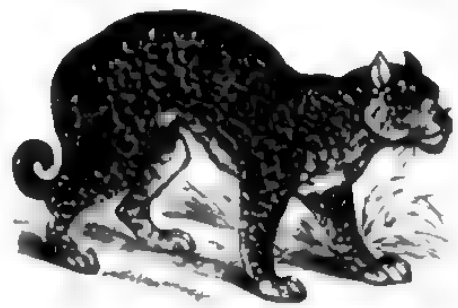
Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily. Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at 12:30, 2:30, and 4:30 p.m.

On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical Rain Forest. Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members): Adults: \$4 single feature; \$5.50 double feature Children: \$2 single feature; \$3 double feature

Birthday Parties

Theme parties for young Members 5-10 years



old are two hours long and held at 3:30 p.m. on Wednesdays, at 4:00 p.m. on Fridays, and at 11:00 a.m. or 2:30 p.m. on weekends. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child. (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769 5606 for further information

Parking

The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first come, first-served basis; fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from 9:30 a.m. to midnight on Friday and Saturday

Hertz Manhattan, located one block away from the Museum at 210 West 77th Street (between Broadway and Amsterdam), offers parking discounts to Members. on Monday through Friday they receive a \$2 discount off regular prices and on Saturday and Sunday Members receive a \$3 discount.

Call the Membership Office at (212) 769 5606 for information about alternative parking

Happenings at the Hayden

Lecture

Frontiers in Astronomy and Astrophysics

On Monday, October 25, at 7:30 p.m., Thomas Bania of Boston University will present an illustrated talk, "The First 100 Seconds in the Life of the Universe." Bania will discuss how probing the strange happenings at the beginning of time and space may help us to understand the nature and fate of the universe.

On Tuesday, November 16, at 7:30 p.m., Steve Maran of the NASA Goddard Space Flight Center will present an illustrated lecture, "Hubble Space Telescope Update." He'll discuss the latest findings from orbit and preview the HST's first rescue mission.

These lectures are part of the Frontiers in Astronomy and Astrophysics series. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. Use the adjacent coupon to order tickets, and for information about ticket availability and upcoming lectures call (212) 769-5900.

Sky Show

Orion Rendezvous...A Star Trek® Voyage of Discovery

Climb aboard the starship Antares for a cosmic journey. Actor LeVar Burton joins the crew as Lieutenant Commander Geordi La Forge, the character he plays on *Star Trek: The Next Generation*®. Enter the twenty-fourth century and journey to a place where six suns blaze in the sky, and then voyage to a sun 100 million times bigger than our own. Discover where stars are born and explore the galactic graveyard of a star that died in one of the most powerful explosions in the universe. Space enthusiasts and *Star Trek*® fans alike will know that they have gone where no planetarium audience has gone before.

Showtimes on Oct. 1, 2, 3, 30, and 31:
Mon.-Fri. 1:30 and 3:30 p.m.
Sat. 11:00 a.m. (except for Oct. 2), 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.
Sun. 1:00, 2:00, 3:00, 4:00, and 5:00 p.m.

Please note: There will be no Sky Shows from Oct. 4 through 29 due to theater renovations. The *Star Trek*® exhibition will be open for viewing.

Admission to the Sky Show for Participating and Higher Members is \$6 for adults and \$3.50 for children ages 2 to 12. Prices and schedule subject to change without notice. For non-Members' prices and additional information, call (212) 769-5100.

Exhibition

Star Trek® Exhibition: A Retrospective of the Sixties

Alien costumes, Starfleet uniforms, *Enterprise* models, and assorted props and photos from Paramount's original 1960s television series are on display in a special exhibition curated by the National Air and Space Museum. Explore the historical, political, social, and cultural themes incorporated into the weekly *Star Trek*® series. For information call (212) 769-5100.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Oct. 2, at 10:30 and 11:45 a.m. and Sat., Nov. 6, at 10:30 a.m. Admission for Participating and Higher Members is \$6 for adults and \$3.50 for children. Members can purchase up to four tickets at the Members' price.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO™ and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., Nov. 6, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900.

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5100

Please note: There will be no laser shows on Oct. 8, 9, 15, 16, 22, and 23, due to theater renovations.

Lecture: "The First 100 Seconds in the Life of the Universe." Monday, October 25, 7:30 p.m.

Number of Members' tickets at \$6 (no more than 4, please):

Number of non-Members' tickets at \$8

Total amount enclosed

Lecture: "Hubble Space Telescope Update." Tuesday, November 16, 7:30 p.m.

Number of Members' tickets at \$6 (no more than 4, please):

Number of non-Members' tickets at \$8

Total amount enclosed

Name

Address

City: State: Zip:

Daytime telephone:

Membership category

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to: Lectures, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Sun Mon Tue Wed Thu Fri Sat

October 1993 American Museum of Natural History

Spotlight Tours
The Volunteer Office offers a series of free Spotlight Tours, which are conducted by professionally trained Volunteer Highlights Tour guides. The tours are listed throughout the calendar, and topics are subject to change. For additional information about the tours, which depart from the second floor between the Roosevelt Rotunda and the Hall of African Mammals, call (212) 769-5566.



2 Noon-4:00 p.m. Hudson River Cruise. \$50 for Members, \$60 for non-Members. Tickets required. Page 2.
3:45 p.m. Spotlight Tour: Journey to the Center of the Earth. Free.

9 11:00 a.m. 1993 Margaret Mead Film Festival. Page 6

3 Last chance to see Bears: Imagination and Reality in Gallery 77.

4 2:45 p.m. Spotlight Tour: Museum Art? Art Museum? Free.
6:30 p.m. 1993 Margaret Mead Film Festival. Page 6

5 1:45 p.m. Spotlight Tour: Siberia. Free.
6:30 p.m. 1993 Margaret Mead Film Festival. Page 6.

6 6:30 p.m. 1993 Margaret Mead Film Festival. Page 6.

7 10:30 and 11:30 a.m. and 1:30 p.m. Rangoli. **8**

Lecture/demonstrations of traditional Indian floor decorations in the Hall of South Asian Mammals. Free (daily through October 16; noon, 2:00 and 4:00 p.m. on weekends). Call (212) 769-5315 for further information.
6:30 p.m. 1993 Margaret Mead Film Festival. Page 6.

16 7:00 a.m.-7:00 p.m. Members' Day Trip to Hawk Mountain. Tickets required. Page 2.

Autumn Festival of India. Call (212) 769-5315 for information about the following programs:

11:00 a.m. - 2:00 p.m. and 3:00 - 4:00 p.m. Traditional Crafts of India. **1:00-4:30 p.m.** Leonhardt People Center events (see Oct. 17). **2:00 p.m.** Indian Cultural Misconceptions and Biases: Panel Discussion. **3:00 and 4:00 p.m.** Folk Dance Workshops. **5:00 p.m.** Let Our Gods Speak. **6:30 p.m.** Classical Music of South India. Free



10 11:00 a.m. 1993 Margaret Mead Film Festival. Page 6.
2:00 p.m. NY Shell Club. Room 319. Free.

11 Columbus Day observed. The Museum is open.
10:45 a.m. Spotlight Tour: Human Biology and Evolution. Free.

12 1:45 p.m. Spotlight Tour: Creation of a Diorama. Free
7:30 p.m. Linnean Society of NY. Linder Theater. Free.

13 6:30 p.m. NY Mineralogical Club. Room 319. Free.
7:45 p.m. Amateur Astronomers Association. Linder Theater. Free.

14 7:00 p.m. DNA Analysis. Members' evening program Kaufmann Theater. Free for Members, \$8 for non-Members. Page 2.

15 6:30 p.m. Members' Rug-Hooking Workshop. Part 1 of 2. \$40, and open only to Participating and Higher Members. Tickets required. Page 2.

17 1:00-4:30 p.m. Indian Nursery Rhymes: Autumn Festivals from Bengal and Delhi: Durga Puja at Home: Indian Modern Artists — Going Home? Leonhardt People Center. Free
For information call (212) 769-5315.

18 2:45 p.m. Spotlight Tour: Theodore Roosevelt Memorial. Free

19 1:45 p.m. Spotlight Tour: Human Biology and Evolution. Free

20 4:00-7:00 p.m. Members' Preview of Antarctica in Gallery 3. Free, and open only to Participating and Higher Members. Page 1.
7:30 p.m. Members' Private Viewing at the Naturemax Theater. \$5, and open only to Participating and Higher Members. Page 1.

21 7:00 p.m. NY Microscopical Society. Room 319. Free.

22 6:30 p.m. Members' Rug-Hooking Workshop. \$40, and open only to Participating and Higher Members. Tickets required. Page 2.
Antarctica opens in Gallery 3. Page 1

23 3:45 p.m. Spotlight Tour: Hidden Stories of the Museum. Free.
4:00 p.m. War of the Worlds Members afternoon program. Linder Theater. \$6 for Members, \$9 for non-Members. Page 2

24 2:00 p.m. NY Paleontological Society. Room 319. Free.
3:00 p.m. Forbidden Journey: The Life of Alexandra David-Neel. Members afternoon program. Kaufmann Theater. \$6 for Members, \$9 for non-Members. Page 2.

25 7:00 p.m. The Mack Lipkin Man and Nature Lectures "Charles Darwin's Portrait of a Small Planet." Part 1 of 2 Main Auditorium. Page 6
7:30 p.m. Frontiers in Astronomy and Astrophysics "The First 100 Seconds in the Life of the Universe." Page 7

26 1:45 p.m. Spotlight Tour: Coral Reefs. Free
7:00 p.m. The Mack Lipkin Man and Nature Lectures "Charles Darwin's Portrait of a Large Primate." Part 2 of 2 Main Auditorium. Page 6
7:30 p.m. Linnean Society of NY. Blum Lecture Room. Free

27

Too Much Mail?

The Membership Office recently mailed a letter to prospective Members asking them to join the Museum. In spite of our best efforts to remove the names of our current Members from this mailing, you may have received one of these letters. Please accept our apology. Would you consider passing the letter on to a friend? Your help in reaching new Members is greatly appreciated.

29 Ghost Stories. Kaufmann Theater. **6:00 p.m.** Members' family program. \$5 for Members, \$8 for non-Members. **8:00 p.m.** Adults' program. \$8 for non-Members, \$12 for non-Members. Page 2.
6:45 p.m. Spotlight Tour: Halloween: The Tour. Free.

30 Members' Behind-the-Scenes Tours of the Department of Herpetology and Ichthyology. Tickets required. Page 2.
1:45 p.m. Spotlight Tour in sign language: Halloween: The Tour. Free.
6:45 p.m. Spotlight Tour: Halloween. Free

31 Halloween.
Daylight Saving Time ends

ROOTTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol. 18, No. 10 November 1993



Wildlife biologist Ian Redmond and Shinda, a young male mountain gorilla

Gorillas in the Mist: The True Story

Tuesday, November 30

7:00 p.m.

Main Auditorium

\$8 for Members, \$12 for non-Members

The story of Dian Fossey's life and achievements among the mountain gorillas of Rwanda has grown to legendary proportions. Fossey's adventures among the greatest of the great apes, whom she came to regard as friends and whom she almost certainly saved from extinction, have been related by writers and journalists in books, newspapers, and magazines around the world; even Hollywood rendered a stylishly melodramatic portrayal. Members can learn the facts about the past and the future of the work at Karisoke Research Centre from one of Fossey's closest friends and co-workers, Ian Redmond, who comes to the Museum this month.

In *Gorillas in the Mist*, her moving account of her years at Karisoke, Fossey warmly acknowledged Red

mond as outstanding among the students who worked at the camp. A wildlife biologist, photographer, and writer, Redmond worked as Fossey's research assistant from 1976 to 1978; in 1980 he worked for the Mountain Gorilla Project and in the following year he took part in a census of the Virunga gorillas. His contributions to Karisoke, Fossey wrote, were "not for personal accolades but for the sake of the gorillas and active conservation within the Virunga Volcanoes."

Redmond will talk with Members about Fossey's controversial philosophy of active conservation. The already arduous circumstances under which the gorillas are studied—at an altitude of 10,000 feet in a region subject to torrential rains, foot deep

mud, and an unstable political climate—is further complicated by poachers and their slaughter. Fossey's two decades of observational studies were constantly interrupted by the need to defend the animals she researched.

Over the years she developed a policy that advocates frequent patrols in wildlife areas to destroy poacher equipment and weapons, backed up by firm and prompt law enforcement. Active conservation also promotes census counts in regions of breeding and ranging concentration and strong safeguards for the animals' limited habitat—rather than the lucrative encroachment of tourists. "I am only one person, but one person on the spot," Fossey wrote. "I know what has to be done for the protection of

the gorillas—long, tiring, strenuous roving patrols over the entirety of the Virungas using Rwandans who can prove themselves. This is actual conservation, not theoretical conservation."

Fossey's concept of active conservation alienated her from much of the scientific community, most fund-raising conservation organizations, and many Rwandans. It also cost Fossey her life—one or more of her numerous enemies murdered her in 1985. The gorillas, however, survive.

In addition to reminiscing about his work with Fossey, Redmond will review new conservation successes and failures in the region, including the effects of Rwanda's civil war. To register for the program, use the coupon on page 3.

Chemistry for Kids

Saturday, November 6

Young Members will experience the magic of chemistry through demonstrations and hands-on experiments at the eighth annual presentation of *Chemistry for Kids*. Patricia Ann Redden, a professor of chemistry and departmental chairperson at Saint Peter's College in Jersey City, will host the program, which is geared toward children between the ages of 5 and 12.

Showtimes are at 11:00 a.m., 1:00 and 3:00 p.m. in the Kaufmann Theater. Tickets are \$6 for Members and \$10 for non-Members. Please note that all attendees must have tickets, and use the November Members' programs coupon on page 3 to register.

Members' Walking Tour of Van Cortlandt Park

Sunday, November 7

Geologist Sidney Horenstein will lead walking tours around Van Cortlandt Park in the Bronx. Horenstein, who is the Museum's coordinator of environmental public programs, will talk about historical features and describe how geological formations influence the park's topography.

The tours will take place at 10:30 a.m., noon, and 1:30 p.m. Tickets are \$16 and available only to Participating and Higher Members. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Members' Private Viewing of Star Trek Exhibition and Sky Show

Tuesday, November 9

Members can take a seat in Captain Kirk's chair and step into the transporter room of the *Enterprise* at a private viewing of the Planetarium's current exhibition. The *Star Trek* retrospective exhibition, which was coordinated by the National Air and Space Museum, features Starfleet uniforms, props, and memorabilia from the 1960s television series. Members will also view the current Sky show, *Orion Rendezvous: A Star Trek Voyage of Discovery*.

The Planetarium will open at 6:00 p.m. on the night of the private viewing. The Sky Show will start at 7:00 p.m., and afterward the exhibition will remain open until everyone has had a chance to see it. Tickets are \$7 and available only to Participating and Higher Members. Use the November Members' programs coupon on page 3 to register.

Members' Day Trip to the Shinnecock Reservation

Saturday, November 13

Many of Long Island's earliest inhabitants vanished after the arrival of colonists. Not so the Shinnecock, whose descendants maintain a reservation in Southampton Village. Members can travel by bus from the Museum to the reservation, where a guide

will lead them on a tour and discuss the reservation's history. A member of the tribe will talk about Shinnecock culture and answer questions.

The trip will take place from 9:00 a.m. to 6:00 p.m. Tickets are \$50 and available only to Participating and Higher Members ages 13 and up. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

The Forbes Magazine Collection of Fabergé

Tuesday, November 23

The objets d'art created by jeweler Peter Carl Fabergé—including his celebrated Imperial Easter Eggs—are the focus of an illustrated lecture. Mary Ellen Sinko, curator of the *Forbes* magazine collection, will discuss highlights from the collection amassed by publisher Malcolm Forbes. She'll also talk about the history of the House of Fabergé and the role of imperial patronage in Fabergé's career.

The program will take place at 7:00 p.m. in the Kaufmann Theater. Tickets are \$6 for Members and \$9 for non-Members; use the coupon on page 3 to register.

Members' Adult-Child Workshop: Feast of Clay

Sunday, November 21

This Thanksgiving you and your child can work together to create a holiday keepsake that you'll treasure for years to come. June Myles will assist adults and kids in fashioning tabletop ornaments from self-hardening clay—options include individual favors for each guest, seasonal candle holders, or a centerpiece.

The 90-minute workshops are geared toward children between the ages of 5 and 9. They'll take place at 10:30 a.m. and 1:30 p.m. Tickets are \$26 per couple and are available only to Participating and Higher Members. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

Members' Guided Tours of Antarctica

Friday, November 12

Visit Antarctica in the company of professionally trained Volunteer Highlights Tour guides. The Gallery 3 tours will take place at 4:00, 5:30, and 7:00 p.m. Tickets are free and available only to Participating and Higher Members. Use the coupon on page 5 to order tickets.



Czar Alexander III presented this Fabergé Renaissance egg to his wife, Maria Feodorovna, in 1894.

Discover Papua New Guinea

The American Museum's scientists have conducted research in Papua New Guinea for decades, and an exciting land and river Discovery Tour from February 16 through March 1 follows in that tradition.

The large island of New Guinea was virtually the last uninhabited place on earth to be explored by Europeans, and even today parts of the country have little contact with the West. The island is rich in natural wonders and its isolation from every major land mass except Australia has allowed the evolution of unique wildlife. Islanders maintain diverse cultural traditions that were studied by Margaret Mead earlier in this century.

Participants on this Discovery Tour will divide their time in New Guinea between the Southern Highlands and the Sepik River. In the highlands they'll stay at Ambua Lodge, which is perched 7,000 feet

above the Tari Gap in the mist-shrouded mountains. The surrounding lands are home to the majestic bird of paradise, exotic plants and flowers, and the "Wigmen" known for their elaborately painted faces and amazing wigs of human hair embellished with feathers, flowers, and shells. Traveling along the Sepik allows participants to visit fascinating villages with immense and distinctive "spirit houses" and to see stunning arrays of local artwork and artifacts.

Accompanying this Discovery Tour and providing an educational enrichment program are an anthropologist who worked with Margaret Mead and an ornithologist/naturalist, both of whom have conducted extensive research in New Guinea. For further information call Discovery Tours at (800) 462-8687 or (212) 769-5700 in New York State.



See Antarctica in Gallery 3

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 10
November 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Yolanda Lofton — Fulfillment Coordinator
Risa Miller — Program Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership, \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to: *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

Printed by Waldon Press, Inc. New York

Members' Adult-Child Workshop

Make a Holiday Gingerbread House

Saturday, December 18, or Sunday, December 19

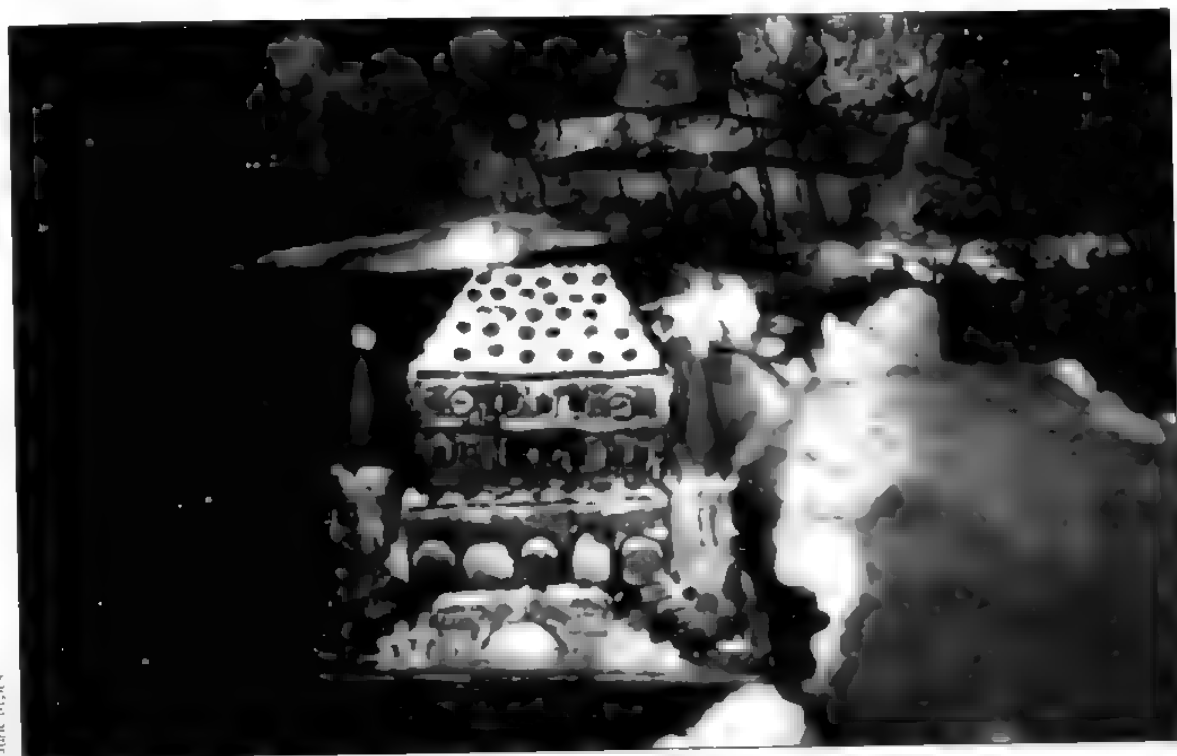
10:30 a.m.-noon or 1:30-3:00 p.m.

\$30 per couple, and open only to Participating and Higher Members
Ages 5-10

Build the house of your sweetest dreams at the Members' annual gingerbread-house-making workshop. Gumdrops, jelly beans, candy canes, and other tasty treats are the stuff of architectural fantasies as they form the bricks, shingles, doors, and

windows of gingerbread houses and apartments. June Myles will show participants how to raise the beams and assemble the structure of their no-bake houses. Then comes the edible art—decorating the houses with an assortment of

cookies and colorful candies. This Members' family workshop has become an annual tradition as parents and kids return each year to build a new holiday creation. Use the coupon on page 5 to register, and please note that tickets are available only by mail.



Origami Holiday Workshops

Saturday, December 11

10:30 and 11:30 a.m., 2:00 and 3:00 p.m.

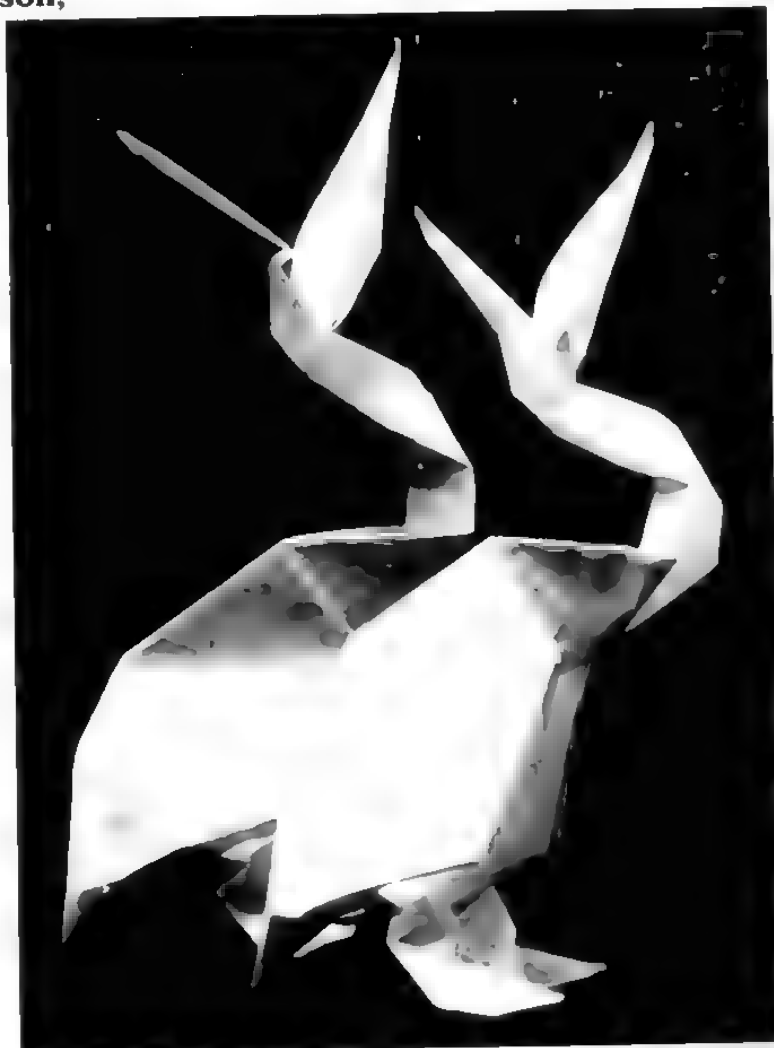
\$2 materials fee per person,
and open only to
Participating
and Higher Members

No scissors, no glitter, no glue—Members of all ages can learn to make animals, stars, and other enchanting figures with just sheets of colored paper. Families can experience the centuries-old charm and satisfaction of paperfolding at the fifteenth annual Holiday Origami Workshops.

Young Children's Workshop (ages 4-6). Youngsters will fold a few models from the following possibilities: butterflies, swans, jumping frogs, candy canes, purses, boxes, or sailboats. Children must be accompanied by an adult.

Beginners' Workshop (ages 6 and older). Participants will fold one or more of the following selections: a blow-up bunny, a panda, a whale, a butterfly, a frog puppet, a penguin, or a crystal.

Intermediate Workshop (ages 7 and older). Participants in this workshop should be comfortable with origami folds such as mountains and valleys, rabbit ears, inside-reverse, and squash folds. They'll learn at least one of the following models: a dove, a dinosaur, a star, a strawberry, or a seal.



All workshops are taught by Museum volunteers and members of the Friends of the Origami Center of America. At the conclusion of the workshops, which have been organized by professional

paperfolder Michael Shall, all Members will receive origami paper and instructions to take home. Use the coupon at right to register, and please note that tickets are available only by mail.

November Members' Programs Coupon

Name _____

Address _____

City: _____ State _____ Zip _____

Daytime telephone _____

Membership category _____

Total amount enclosed _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to November Members Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 5192. **Telephone reservations are not accepted. No refunds or exchanges.**

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price. Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

Chemistry for Kids. Saturday, November 6
Please indicate a first, second, and third choice of times
11:00 a.m. _____ 1:00 p.m. _____ 3:00 p.m. _____
Number of Members' tickets at \$6 _____
Number of additional tickets at \$10 _____
Total amount enclosed for program _____

Members' private viewing of Star Trek
Tuesday, November 9, 6:00 p.m.
Number of Members' tickets at \$7 _____
Total amount enclosed for program _____

The Forbes Magazine Collection of Fabergé
Tuesday, November 23, 7:00 p.m.
Number of Members' tickets at \$6 _____
Number of additional tickets at \$9 _____
Total amount enclosed for program _____

Gorillas in the Mist. Tuesday, November 30, 7:00 p.m.
Number of Members' tickets at \$8 _____
Number of additional tickets at \$12 _____
Total amount enclosed for program _____

Endangered Species. Friday, December 10, 7:00 p.m.
Number of free Members' tickets (no more than 2, please) _____
Number of additional Members' tickets at \$5 _____
Number of non-Members' tickets at \$8 _____
Total amount enclosed for program _____

Origami Holiday Workshops. Saturday, December 11
Please indicate workshop level and a first, second, and third choice of times
____ Young Children's Workshop
____ Beginners' Workshop
____ Intermediate Workshop
____ 10:30 a.m. _____ 11:30 a.m. _____
____ 2:00 p.m. _____ 3:00 p.m. _____
Number of Members' tickets at \$2 _____
Total amount enclosed for program _____

Valley Forge. Wednesday, December 15, 7:00 p.m.
Number of Members' tickets at \$7 _____
Number of additional tickets at \$10 _____
Total amount enclosed for program _____

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

New President for the American Museum

Ellen V. Futter, the first woman to serve as chief executive in the Museum's 124 year history, takes office as president this month. Futter, who has been president of Barnard College for the past 13 years, succeeds George D. Langdon, Jr., who announced last December that he intended to step down when he completed his five-year term.

Futter, 44, was the youngest person ever to head a major American college at the time of her inaugural. She is renowned as a dynamic voice for higher education. She moves from the stewardship of a select educational institution with a faculty and staff of over 700 and an endowment of more than \$60 million to a cultural institution with a curatorial and adminis-

trative staff of 750 and an endowment of over \$200 million.

As president of the Museum, Futter's goals include making the Museum a leading public forum, both nationally and internationally, for the debate of the great scientific issues of our time; substantially enlarging the Museum's educative role for both adults and children; dramatically increasing the Museum's visibility and influence in New York; and making the Museum's scholarly work better known.

A Barnard alumna, Futter received her JD degree from the Columbia University School of Law in 1974 and practiced corporate law at Milbank, Tweed, Hadley, and McCloy for six years. She became acting president of Barnard in 1980 and was



Ellen V. Futter

named president the following year

Valley Forge: 100 Years of Preservation

Wednesday, December 15
7:00 p.m.

Kaufmann Theater

\$7 for Members, \$10 for non-Members



Washington's headquarters at Valley Forge

An important chapter in America's Revolutionary War history began with the Continental Army's winter encampment at Valley Forge. In 1893 the site was named a national historical park, and at Valley Forge: 100 Years of Preservation, the park's superintendent will discuss its history.

Washington's troops took up bivouac positions in December 1777 at the Pennsylvania camp. Valley Forge was far enough away from the British troops to discourage attacks—the redcoats were

lodged in the comfort and warmth of Philadelphia. Its location on high ground, with the Schuylkill River to the north and Valley Creek to the west, made it defensible terrain.

The bitterness of the winter the army endured at Valley Forge is legendary in American history, but the training the soldiers received there contributed greatly to their triumph at Yorktown four years later. The reinvigorated army departed from Valley Forge in June 1778, and their camp was abandoned

but not forgotten.

This year is Valley Forge National Historical Park's centennial, and park superintendent Warren D. Beach will talk with Members about the agencies that managed Valley Forge over the last century. He'll show slides of the site and discuss how the desire to preserve it grew from an idea passed around a kitchen table into the national park of today.

Use the November Members' programs coupon on page 3 to register for the program.

Members' Day Trip to the Philadelphia Academy of Natural Sciences

A Day with the Dinosaurs

Saturday, December 4
9:00 a.m.–6:30 p.m.
\$50, and open only to
Participating and Higher Members
Ages 10 and older

Can you clone your own dinosaur? And if you could, would you want to? After a hot summer of *Jurassic Park* mania Members can ponder these and other burning questions at Philadelphia's Academy of Natural Sciences.

Naturalist June Myles will escort Members on the trip, which departs from the American Museum at 9:00 a.m. Participants will arrive at the academy at about 11:00 a.m. for a private behind-the-scenes tour led by the head of the vertebrate paleontology department. After a bag lunch an academy docent will lead a tour of the permanent dinosaur exhibits.

Before heading homeward participants can explore the exhibition *Jurassic Park: The*

Science Behind the Mayhem. At this exciting exhibition, which looks at the benefits and risks of genetic engineering, participants will learn what scientists know about dinosaur behavior, size, and physiology. They'll also see some of the dinosaurs modern-day relatives. (Participants will tour the exhibition on their own.) The group will arrive back at the American Museum at 6:30 p.m.

If you missed the American Museum's *Jurassic Park* exhibition or if you saw it and it whetted your appetite for more dinosaurs, this trip is a not-to-be-missed opportunity. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

The New York Revels

The Winter Revels

Monday, December 6,
through Thursday, December 9
7:30 p.m.

Main Auditorium

\$12 for all children, \$17 for adult Members,
\$22 for adult non-Members

Holiday cheer abounds with the New York Revels at a performance of traditional dances, processions, carols, and drama. *The Winter Revels* echoes the Celtic rituals that marked the seasonal boundary between shadow and sunshine at the end of the old year and the beginning of the new. Through performance and participatory theater the Revels members blend song, dance, and drama into a celebration of life itself.

A nonprofit organization, Revels is dedicated to the communication of timeless traditions. Its repertoire is drawn from many cultures, and its productions show that all cultures in all times are fed by the same great river of myth, story, and song. The troupe members seek to revive community celebration in

today's world by inviting the audience to sing and dance with them in the aisles.

A cast of 70 children and adults will perform a variety of dances including the ancient "Abbots Bromley" antler dance (in which dancers bear the massive horns of a reindeer atop their heads), Morris dancing, and a sword dance. The Revels chorus will sing a wassail song, a variety of pagan carols (including "The Holly and the Ivy" and the ritual "Hunting of the Wren" song), and a grand Renaissance choral piece accompanied by early instruments and handbells.

Performances will take place nightly from Monday, December 6, through Thursday, December 9. The Garden Cafe will be open each evening. Use coupon on page 5 to register.

Endangered Species: Restoring the Black Howler Monkey

Friday, December 10
7:00 p.m.

Kaufmann Theater

Free for Members, \$8 for non-Members



Mammalogist Fred Koontz will discuss strategies for preserving endangered species

Hailed as a visionary piece of legislation, the Endangered Species Act was signed into law by President Nixon in December 1973. In observance of our nation's 20 years of commitment to conserving endangered species, Members can hear about the reintroduction of the black howler monkey into the Cockscomb Basin of Belize.

Fred Koontz, curator of mammals at the Bronx Zoo/Wildlife Conservation

Park, has worked with a team of scientists for the last two years on an ambitious project to reestablish a population of black howler monkeys in the basin. The combined pressures of yellow fever, hurricane damage, and overhunting had driven the species to local extinction in 1978.

Koontz will describe how wild howlers were captured from a healthy population in northern Belize, transported,

and released after an acclimation period into the Cockscomb Basin Wildlife Sanctuary, a 100,000-acre nature preserve located in southern Belize. He'll discuss the radio tracking of the monkeys after their release and the ways in which this project contributes to possible restorations of other endangered primate populations by similar methods.

Use the coupon on page 3 to register

Members' Tours of the

Con Edison Plant

Thursday, December 2

4:00 and 6:00 p.m.

\$16, and open only to Participating and Higher Members
Ages 16 and older

Sidney Horenstein, the Museum's coordinator of public programs, will lead Members on a tour of a Con Edison plant, where they'll observe the generator and hear about how it supplies local power.

Participants will meet at 11th Avenue and 59th Street. As they approach the 12th Avenue entrance,

Horenstein will discuss the plant's setting. The building, which occupies an entire square block, was designed by the architectural firm of McKim, Mead, and White. It was the main powerhouse for the city's first subway, the IRT, which opened in 1904.

The tours will observe all of the facility's operations. They'll see the production of

steam, which is used to drive the turbines that generate electricity. The steam is then sold for heating purposes to commercial buildings.

This tour involves extensive walking and stair climbing; participants should be able to keep pace. Use the coupon at right to register, and please note that tickets are available only by mail.

Members' Workshop

Deciphering the Human Skeleton

Thursday, December 16

5:30-7:30 p.m.

\$40, and open only to
Participating and Higher Members

When only the bones remain, how much information about an individual can be reconstructed? Jeffrey Schwartz, professor of anthropology at the University of Pittsburgh and research associate in anthropology at the American Museum, will present an introductory workshop that examines the conclusions of forensic anthropology.

The workshop will begin with a lecture, supplemented with slides and specimens dealing with analyses and problems in forensic studies. These include disease and pathology, trauma, artificial manipulation and alteration of parts of the skeleton, normal skeletal variation, and the determination of age and sex of the individual. Schwartz will discuss the stereotypes that have crept into these studies and point out

some of the problems that forensic anthropologists encounter in the field.

The second half of the workshop will deal with specimens. Participants will test the stereotypes of gender based on European material and see how consistently skeletal morphology can be termed male or female. They'll also observe how certain aspects of aging and disease can alter parts of the skeleton from "male" to "female." A geographically diverse sample of skeletal material will be available for firsthand study of how much information can be extracted from the bones.

Enrollment is limited, and a reading list will be provided upon registration. Use the coupon below to register, and please note that tickets are available only by mail.

Membership Workshops and Tours. Use this coupon to register for *Deciphering the Human Skeleton* and the day trips to *Shinnecock Reservation* and the *Philadelphia Academy of Natural Sciences*. Indicate a first, second, and third choice of dates and times to register for the *Gingerbread House* workshops, a first and second choice of times for *Antarctica* tours, and a first and second choice of times for *Clay Workshops* and *Con Ed Tours*. Indicate a first, second, and third choice of dates for *The Winter Revels*.

Name(s) of program(s): _____

Number of tickets and price (please indicate which program if more than one) _____

Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Workshops and Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192*

Our Own Backyard

A Natural History of the Hudson River Valley

Five consecutive Wednesdays, beginning January 19
6:30-8:30 p.m.
Main Auditorium

Our Own Backyard, a five-part lecture series, covers a variety of topics concerning Hudson River ecology, geology, and hydrology. The programs will focus on the ways in which geology and land use in the drainage basin shape habitat and influence ecology. Such factors lead to the formation of distinct communities of fishes and other organisms as water flows from high in the Adirondacks to New York Bay. The biology of these organisms—how and why their numbers fluctuate, the food chain, plants, and habitat—will be examined. In the final session registrants will meet with the speakers in half-hour workshops that focus on areas of special interest.

January 19: "Introduction to the Hudson: Biotic Geography," C. Lavett Smith, AMNH; "Geology of the Valley," Sidney Horenstein, AMNH.

January 26: "Environment of the Hudson Valley: Climatology," Irv Gikofsky, meteorologist, WPIX and CBS-FM; "Hydrology," Ward

Freeman, US Geological Survey.

February 2: "Botany and Zoology of the River: Plants," Stuart Findlay, Institute of Ecosystem Studies; "Invertebrates," Robert Daniels, NY State Museum.

February 9: "Zoology of the River: Birds," Dennis Mildner, Hudson River Estuarine Research Reserve; "Amphibians and Reptiles," Michael Klemens, AMNH Department of Herpetology and Ichthyology; "Mammals," James Rod, National Audubon Society.

February 16: Specialty workshops with speakers of registrants' choice.

Registration fees are \$100 for Members and \$120 for non-Members for the series without credit, and \$160 for credit. Individual lectures may be attended on a space-available basis: tickets are \$25 for Members, \$30 for non-Members, and \$10 for students and senior citizens.

Participants who register for college credit will be required to attend the five lectures, perform one of several

available laboratory experiments, and complete a take-home final exam.

The January 19 program will feature a welcome by William T. Golden, chairman of the American Museum. The series' program directors are C. Lavett Smith, curator emeritus of the Department of Ichthyology, and John Waldman, research associate at the Hudson River Foundation. *Our Own Backyard* is presented by the Friends of Fishes Committee of the Department of Ichthyology and the Hudson River Foundation. All proceeds benefit the Department of Ichthyology.

For further information call Friends of Fishes at (212) 289-3605 or fax (212) 360-6625. To register, make your check payable to Friends of Fishes/AMNH, enclose a stamped, self-addressed envelope, and mail to: *Our Own Backyard*, Friends of Fishes, Department of Ichthyology, American Museum of Natural History, 79th Street and Central Park West, New York, NY 10024-5192.

Discover

Explore our Naturemax Dinner Theater Package

See our latest features:

Tropical Rain Forest and Antarctica

Includes a complete dinner entree,
appetizer or dessert and coffee
per person **\$21.00**

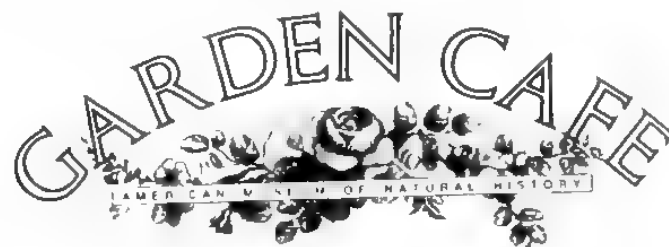
Hours

Lunch, Mon.-Fri: 11:30 - 3:30

Saturday and Sunday Brunch: 11:00 - 4:00

Dinner seating, Fri.-Sat: 5:00 - 7:30

For Reservations call 212-769-5865



Member-Get-a-Member



What could be better than sharing the benefits and privileges of Participating membership with friends and relatives?

Use the form below to recommend friends or relatives for Museum membership, and we'll send them information and an applica-

tion. When someone you recommend for membership becomes a Participating Member of the Museum, we'll thank you with a \$10 coupon to apply toward your next Participating membership renewal. This form must be used to qualify for the \$10 coupon.

Membership Services, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

These folks may be interested in Participating membership:

1. Name: _____

Address: _____

City: _____ State: _____ Zip: _____

2. Name: _____

Address: _____

City: _____ State: _____ Zip: _____

My name is: _____

Address: _____

City: _____ State: _____ Zip: _____

TZMG

Striped Bass Tag and Release in NY Harbor

Friday, November 26

Friends of Fishes and the Hudson River Foundation present the second annual day-after-Thanksgiving outing at which participants will catch, tag, and release striped bass.

At 8:30 a.m., on Friday, November 26, anglers will board the *Miss Elizabeth* at South Street Seaport. A first class fishing vessel with a heated cabin, the *Miss Elizabeth* is captained by Joe Pe-

plowski. Participants will be accompanied by John Waldman of the Hudson River Foundation, curators from the Department of Ichthyology, Friends of Fishes scientific adviser Tom Lake, Captain Joe Shastay, and baykeeper Andy Wilner. Soup, sandwiches, beer, wine and cheeses, fruit, and sweets will be served, and all fishing gear will be provided.

For additional information

call Friends of Fishes at (212) 289-3605 or fax (212) 360-6625.

To register, make your check for \$60 payable to Friends of Fishes/AMNH and mail with a self-addressed, stamped envelope to: *Friends of Fishes*, Department of Ichthyology, American Museum of Natural History, 79th Street at Central Park West, New York, NY 10024-5192.

Cuba: Nature of an Island

Scientists from the American Museum and the Museo Nacional de Historia Natural in Havana have explored Cuba's remarkable flora and fauna together since 1989. An exhibition of photographs and specimens in the Akeley Gallery that illustrates some of the results of this unusual joint project will be on display through January 3.



Happenings at the Hayden

Lecture

Frontiers in Astronomy and Astrophysics

On Tuesday, November 16, at 7:30 p.m., Steve Maran of the NASA Goddard Space Flight Center will present an illustrated lecture, "Hubble Space Telescope Update." He'll discuss the latest findings from orbit and preview the HST's first rescue mission.

This lecture is part of the *Frontiers in Astronomy and Astrophysics* series. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. For information about ticket availability and upcoming lectures call (212) 769-5900.

Sky Show

Orion Rendezvous...A Star Trek® Voyage of Discovery

Climb aboard the starship *Antares* for a cosmic journey. Actor LeVar Burton joins the crew as Lieutenant Commander Geordi La Forge, the character he plays on *Star Trek: The Next Generation*®. Enter the twenty-fourth century and journey to a place where six suns blaze in the sky, and then voyage to a sun 100 million times bigger than our own. Discover where stars are born and explore the galactic graveyard of a star that died in one of the most powerful explosions in the universe. Space enthusiasts and *Star Trek* fans alike will know that they have gone where no planetarium audience has gone before.

Showtimes through Nov. 22:

Mon.-Fri. 1:30 and 3:30 p.m.
Sat. 11:00 a.m. (except for Nov. 6), 1:00,
2:00, 3:00, 4:00, and 5:00 p.m.

Showtimes Nov. 24-Jan. 2:

Mon.-Fri. 2:30 p.m.
Sat. 11:00 a.m. (except for Dec. 4),
2:00 and 4:00 p.m.
Sun. 2:00 and 4:00 p.m.

Star of Christmas Nov. 24-Jan. 2

At this holiday program, viewers gaze out on a clear winter's night and travel back nearly 2,000 years to explore the skies of the first Christmas. Just what led the Wise Men to Bethlehem? Was it a special star that no one else had seen before? A comet? Or something else? Join us for this special holiday tradition.

Showtimes:

Mon.-Fri. 1:30 and 3:30 p.m.
Sat. and Sun. 1:00, 3:00, and 5:00 p.m.

The Planetarium is closed on Thanksgiving Day, Thursday, Nov. 25. On Fri., Nov. 26, *Orion Rendezvous: A Star Trek® Voyage of Discovery* will be shown at 1:00 and 3:00 p.m. Performance times for *Star of Christmas* will be noon, 2:00 and 4:00 p.m.

Admission to the Sky Show for Participating and Higher Members is \$6 for adults and \$3.50 for children ages 2 to 12. Prices and schedules subject to change without notice. For non-Members' prices and additional information, call (212) 769-5100.

Exhibition

Star Trek® Exhibition: A Retrospective of the Sixties

Alien costumes, Starfleet uniforms, *Enterprise* models, and assorted props and photos from Paramount's original 1960s television series are on display in a special exhibition curated by the National Air and Space Museum. Explore the historical, political, social, and cultural themes incorporated into the weekly *Star Trek*® series. For information call (212) 769-5100.

Holiday Concert

The Planetarium's *Tenth Annual Holiday Concert Under the Stars* will feature the New York Philomusica. On Wednesday, December 15, and Thursday, December 16, at 7:30 p.m., the performers will play a special selection of music from the baroque to the present and beyond. The Planetarium's magnificent starry sky, dazzling laser lights, and special effects combine to make this a unique holiday experience.

Participating and Higher Members are entitled to four tickets at \$15 each. Additional tickets may be purchased at the non-Members' price of \$18 each. Use the coupon at right to register, and for further information call (212) 769-5900.

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Nov. 6, at 10:30 a.m., and Sat., Dec. 4, at 10:30 and 11:45 a.m. Admission for Participating and Higher Members is \$6 for adults and \$3.50 for children. Members can purchase up to four tickets at the Members' price.

Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: *Wonderful Sky*, Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.

Robots in Space features Lucasfilm's R2D2 and C-3PO™ and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and

far. Journey from the earth to other planets and distant black holes. Sat., Nov. 6, and Sat., Jan. 8, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900.

Eclipse Talk

On Monday, November 15, at 6:30 p.m., meteorologist Joe Rao will present an illustrated talk about the total eclipse of the moon that will take place on November 29. For tickets information, call (212) 769-5900.

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5100.

It's always a good idea to call before visiting the Planetarium, since prices, programs, and showtimes are subject to change without notice. For general Planetarium information, call (212) 769-5100.

Holiday Concert. Please indicate a first and second choice.

___ Wed., Dec. 15 ___ Thurs., Dec. 16
Number of Members' tickets at \$15
(no more than 4, please): ___
Number of non-Members' tickets at \$18: ___
Total amount enclosed: ___

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the Hayden Planetarium and mail with a **self-addressed, stamped envelope** to: Concert, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024 5192.

Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. **Do not include ticket requests or checks for American Museum programs.**

Museum Notes

Hours

Exhibition Halls

Mon.-Thurs. & Sun. 10:00 a.m.-5:45 p.m.
Fri. & Sat. 10:00 a.m.-8:45 p.m.

The Museum Shop

Mon.-Thurs. & Sun. 10:00 a.m.-5:45 p.m.
Fri. & Sat. 10:00 a.m.-7:45 p.m.

The Junior Shop

Mon.-Fri. 10:00 a.m.-4:45 p.m.
Sat. & Sun. 10:00 a.m.-5:45 p.m.

The Museum Library

Tues.-Fri. 11:00 a.m.-4:00 p.m.

The Discovery Room

Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10. Children must be accompanied by an adult. Closed on holidays and weekdays.

Sat. & Sun. Noon-4:30 p.m.

The Natural Science Center

For children of all ages and their families. Closed on Mondays and holidays.

Tues.-Fri. 10:30 a.m.-12:30 p.m.
and 2:00-4:30 p.m.
Sat. & Sun. 1:00-4:30 p.m.

Museum Dining

Diner Saurus Fast Service Eatery

Daily 11:00 a.m.-4:45 p.m.

Garden Cafe

Reservations: (212) 769-5865

Lunch: Mon.-Fri. 11:30 a.m.-3:30 p.m.

Dinner: Fri. & Sat. 5:30-7:30 p.m.

Brunch: Sat. & Sun. 11:00 a.m.-4:00 p.m.

Whale's Lair

Fri. 3:00-8:00 p.m.

Sat. Noon-8:00 p.m.

Sun. & most holidays Noon-5:00 p.m.

Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)

Sat. & Sun. 11:00 a.m.-4:00 p.m.

Entrances

During Museum hours visitors can enter the building through the 77th Street entrance, the

parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and Central Park West). **Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.**

Parking

The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and available on a first come, first-served basis; fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from 9:30 a.m. to midnight on Friday and Saturday.

Hertz Manhattan, located one block away from the Museum at 210 West 77th Street (between Broadway and Amsterdam), offers parking discounts to Members: on Monday through Friday they receive a \$2 discount off regular prices and on Saturday and Sunday Members receive a \$3 discount.

Call the Membership Office at (212) 769-5606 for information about alternative parking.

1

2

Election Day

3

7:45 p.m. Amateur Astronomers Association. Linder Theater. Free.

4

Members' Behind the Scenes Tours of the Department of Herpetology and Ichthyology. Tickets required. Call the Membership Office at (212) 769-5606 for information.

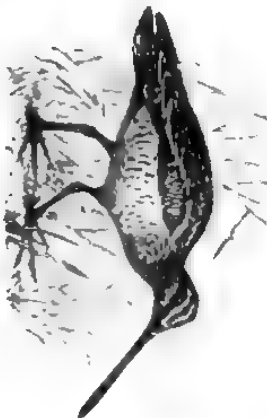
5

6

11:00 a.m., 1:00 and 3:00 p.m. Chemistry for Kids. Members' family program. Kaufmann Theater. \$6 for Members, \$10 for non-Members. Page 2.

November 1993

American Museum of Natural History



7

10:30 a.m., noon, and 1:30 p.m. Members' Walking Tours of Van Cortlandt Park. \$16, and open only to Participating and Higher Members. Tickets required. Page 2.

8

2:25 p.m. Spotlight Tour: Theodore Roosevelt Memorial. Free.

9

6:00 p.m. Members' Private Viewing of Star Trek Retrospective Exhibition and Sky Show. \$7, and open only to Participating and Higher Members. Page 2.

7:30 p.m. Linnaean Society of NY. Blum Lecture Room. Free.

10

6:30 p.m. NY Mineralogical Society. Room 319. Free.

11

Veterans Day. The Museum is open. 1:45 p.m. Spotlight Tour: Human Biology and Evolution. Free

12

4:00, 5:30, and 7:00 p.m. Members' Guided Tours of Antarctica. Gallery 3. Free, and open only to Participating and Higher Members. Tickets required. Page 2.

13

9:00 a.m.-6:00 p.m. Members' Day Trip to the Shinnecock Reservation. \$50, and open only to Participating and Higher Members. Tickets required. Page 2.

14

2:00 p.m. NY Shell Club. Room 319. Free.



16

7:30 p.m. Frontiers in Astronomy and Astrophysics. Speaker: Steve Maran, NASA Goddard Space Flight Center. "Hubble Space Telescope Update." \$6 for Members, \$8 for non-Members. Page 7

17

18

1:45 p.m. Spotlight Tour: Coral Reefs. Free.

7:00 p.m. NY Microscopical Society. Room 319. Free.

19

20



21

10:30 a.m. and 1:30 p.m. Feast of Clay. Members' adult-child workshop. \$26 per couple, and open only to Participating and Higher Members. Tickets required. Page 2

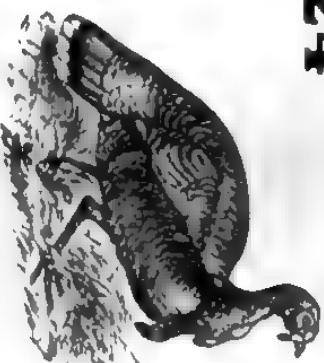
22

23

11:00 a.m. The Origami Holiday Tree-Lighting Ceremony will take place in the Roosevelt Memorial Hall. On display through January 9

7:00 p.m. The Forbes Magazine Collection of Fabergé Members evening program. Kaufmann Theater \$6 for Members, \$9 for non-Members. Page 2

24



25

Thanksgiving Day closed The Museum is

26

8:30 a.m. Striped Bass Tag and Release in NY Harbor. \$60, and open only to Participating and Higher Members. Page 6

27

Spotlight Tours

The Volunteer Office offers a series of free Spotlight Tours, which are conducted by professionally trained Volunteer Highlights Tour guides. The tours are listed throughout the calendar, and topics are subject to change. For additional information about the tours, which depart from the second floor between the Roosevelt Rotunda and the Hall of African Mammals, call (212) 769-5566

Naturemax

The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth. Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at 12:30, 2:30, and 4:30 p.m.

On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical Rain Forest. Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.

Admission (Participating and Higher Members) Adults: \$4 single feature; \$5.50 double feature Children: \$2 single feature; \$3 double feature

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities Institute for Museum Services, 300 Arts National Endowment for the Humanities Institute for Museum Services, 300 corporations, 100 private foundations, 520,000 members, and numerous individual contributors

ROTUNDA

For Participating and Higher Members of the American Museum of Natural History

Vol 18, No 11 December 1993



The New York Revels

The Winter Revels

**Monday, December 6, through Thursday, December 9
7:30 p.m., Main Auditorium
\$12 for all children, \$17 for Members, \$22 for non-Members
Sign language performance on December 9**

Merrymakers in the Museum's Main Auditorium will find themselves transported to a medieval village when the New York Revels reenact the pageants and myths of medieval England. A cast of 70 children and adults will perform carols, processions, traditional folk songs and dances, poetry, and rituals associated with the winter solstice. By singing familiar folk songs and dancing in the aisles with the cast, the audience joins in the spirit of *The Winter Revels*.

The heart of the Revels is community participation. A nonprofit organization, Revels is dedicated to teaching people by imparting timeless traditions that bond participants together

as companions in celebration.

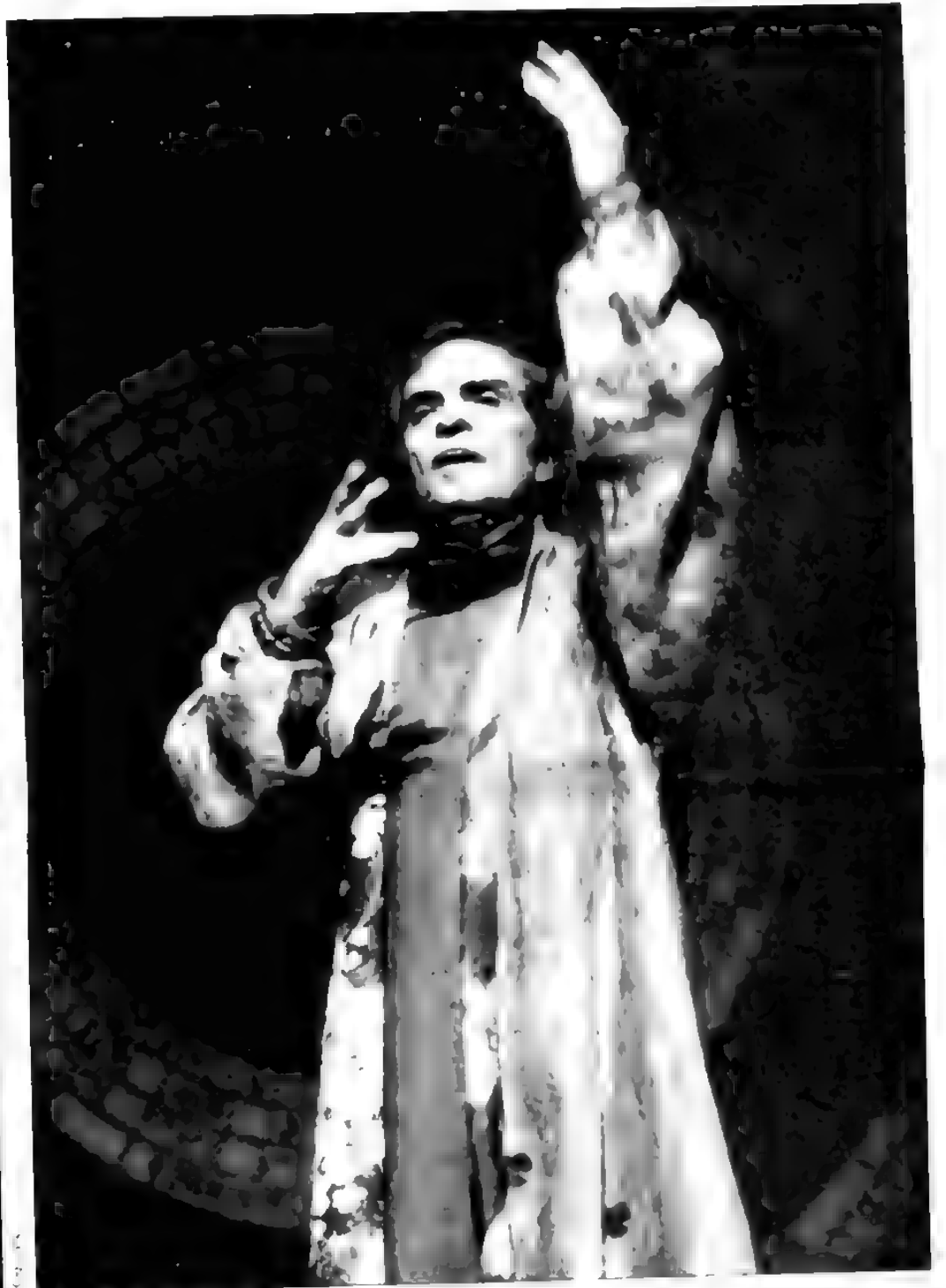
Among the festivities will be a "feast of fools" ritual, in which a Lord of Misrule is chosen from the audience. A group of mummers will appear in the folkplay of Saint George and the Dragon and perform a traditional sword dance. Musical selections will include the Boar's Head ceremonial carol, sung for centuries in the dining hall at Christ's Church, Oxford, the Wassail song, sung as a village celebration with mimed "animals" of the farm, and pagan carols such as "The Holly and the Ivy" and the ritual "Hunting of the Wren" song, whose sources date back to the days of sun, animal, and vegetation worship. A

brass quintet with timpani will perform an early music repertoire and accompany the chorus and audience in participatory segments, including a grand choral piece with handbells.

The company's first *Christmas Revels*, held in Cambridge in 1971, was a glowing mix of medieval and Renaissance song and dance. This vibrant new kind of theater — a vaudeville-style format with folk music dances, and skits that revolve around an ancient ceremonial theme — has spread to nine American cities to date. Jack Langstaff, the Revels founder, will be returning to New York to perform in celebration of the Revels' fifteenth year in New York.

Performances will take place nightly from Monday, December 6, through Thursday, December 9. The Garden Cafe will be open each evening from 5:00 to 7:00 p.m. Reservations are recommended; call (212) 769-5865. Use the coupon on page 5 to register for the program.

The New York Revels will be collaborating with City Harvest, a not-for-profit organization committed to feeding the homeless, on a canned food drive during the evenings of the Revels performances. Please bring canned goods with you to the performance to share with the homeless of New York. A container for collecting the goods will be provided.



Revels founder Jack Langstaff will perform in celebration of the Revels' fifteenth year in New York

Members' Tours of the

Con Edison Plant

Thursday, Dec. 2
SOLD OUT

Sidney Horenstein, the Museum's coordinator of public programs, will lead a tour of the Con Edison plant at West 59th Street. Participants will see the generator and learn about how it supplies local power. They'll observe all of the facility's operations, including the production of steam that's used to drive the turbines that generate electricity.

This tour involves extensive walking and stair climbing. Participants should be confident in their ability to keep pace with the group.

Tours will take place at 4:00 and 6:00 p.m. Tickets are \$16 and available only to Participating and Higher Members ages 16 and older.

A Day with the Dinosaurs

Saturday, Dec. 4

On a day trip to the Philadelphia Academy of Natural Sciences, Members will take a private behind-the-scenes tour and a guided tour of the academy's permanent dinosaur exhibits. They'll also explore the special exhibition *Jurassic Park: The Science Behind the Mayhem*, which looks at the benefits and risks of genetic engineering.

The brief behind-the-scenes tour will be led by the head of the academy's vertebrate paleontology department, and a docent will guide Members around the permanent exhibits. Participants will visit the *Jurassic Park* exhibition on their own to learn about modern-day descendants of the dinosaurs and recent discoveries about dinosaur behavior, size, and physiology.

June Myles will accompany Members on the trip, which will depart from the American Museum by bus at 9:00 a.m. and return at 6:30 p.m. (The drive is about two hours each way.) Tickets are \$50 and available only to Participating

and Higher Members ages 10 and older. Call the Membership Office at (212) 769-5606 for information about ticket availability.

Endangered Species:

Restoring the Black Howler Monkey

Friday, Dec. 10

There were no black howler monkeys in southern Belize for more than a decade until an ambitious conservation program reestablished them in the Cockscomb Basin. Fred Koontz, curator of mammals at the Bronx Zoo/Wildlife Conservation Park, has worked with a team of scientists for the last two years on reintroducing howlers to the basin. Koontz will describe how wild howlers were captured from a healthy population in northern Belize, transported, and after an acclimation period, released into a 100,000-acre nature preserve.

This program is presented in observance of the twentieth anniversary of the Endangered Species Act, a legislative landmark in conservation. The lecture will begin at 7:00 p.m. in the Kaufmann Theater. Tickets are free for Members and \$8 for non-Members. Use the coupon on page 3 to order tickets.

Origami Holiday Workshops

Saturday, Dec. 11

Deck the halls with origami after some expert instruction at the fifteenth annual Origami Holiday Workshops. Members of the Friends of the Origami Center of America will be on hand to instruct Members of all ages in the engaging art of paperfolding.

Workshops are available at three levels: a *Young Children's Workshop*, geared toward 4- to 6-year-olds, at which children must be accompanied by an adult; a *Beginners' Workshop* for participants ages 6 and older; and an *Intermediate Workshop* for more experienced hands who are comfortable

with origami folds such as mountains and valleys, rabbit ears, inside-reverse, and squash folds.

All participants will receive origami paper and instructions to take home. The workshops will take place at 10:30 and 11:30 a.m. and 2:00 and 3:00 p.m. There is a \$2 materials fee per person, and tickets are available only to Participating and Higher Members. Use the December Members' programs coupon on page 3 to register.

Valley Forge: 100 Years of Preservation

Wednesday, Dec. 15

The Continental Army of 1778 endured the winter of their discontent at Valley Forge, a Pennsylvania encampment that's synonymous in American history with courage in the face of hardship. The revolutionary warriors didn't find their glorious summer until four years later at Yorktown, but the hard lessons learned at Valley Forge contributed greatly to their ultimate triumph.

The campsite was named a national historical park in 1893 and at Valley Forge: 100 Years of Preservation park superintendent Warren D. Beach will talk with Members about the site's management and development over the last century.

The program will take place at 7:00 p.m. in the Kaufmann Theater. Tickets are \$7 for Members and \$10 for non-Members; use the coupon on page 3 to register.

Members' Workshop

Deciphering the Human Skeleton

Thursday, Dec. 16

SPACE MAY BE AVAILABLE

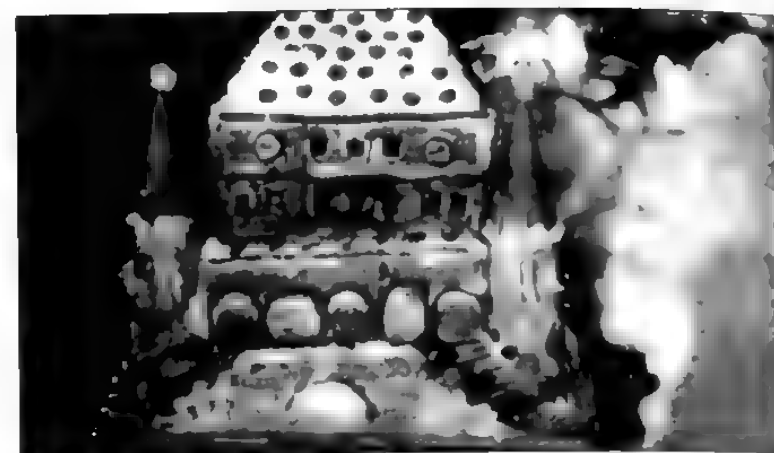
An introductory workshop that examines the analyses and limits of forensic anthropology, *Deciphering the Human Skeleton* will demonstrate how much information about an individual can be reconstructed when only the bones remain. The workshop will be presented by Jeffrey Schwartz, professor of anthropology at the University of Pittsburgh and research associate in anthropology at the American Museum. The program, which will take place from 5:30 to 7:30 p.m., will begin with a slide lecture and conclude with an examination of specimens.

Tickets are \$40 and available only to Participating and Higher Members. Enrollment is limited, and a reading list will be provided upon registration. Call the Membership Office at (212) 769-5606 for ticket availability.

Members' Adult-Child Workshop

Make a Holiday Gingerbread House

Saturday, Dec. 18, or Sunday, Dec. 19
SOLD OUT



Build the gingerbread house of your dreams at the Members' annual workshops, in which June Myles will show parents and kids how to raise the beams and assemble the structure of their no-bake houses. Then a colorful assortment of cookies, gum-

drops, jelly beans, and other candies will make up the trimmings.

The 90-minute workshops will take place at 10:30 a.m. and 1:30 p.m. each day and are geared toward children between the ages of 5 and 10.

ROTUNDA

ISSN 0194-6110

Vol. 18, No. 11
December 1993

Donna Bell — Editor
Sheila Greenberg — Manager of Membership Services
Angela Soccodato — Designer
Rita Campon — Copy Editor
Yolanda Lofton — Fulfillment Coordinator
Risa Miller — Program Coordinator

Rotunda, a publication for Participating and Higher Members of the American Museum of Natural History, is published monthly September through June, bimonthly July and August. Publication offices are at *Natural History* magazine, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Telephone: (212) 769-5606. Subscriptions: \$50 a year for Participating Membership; \$100 a year for Contributor Membership. © 1993 American Museum of Natural History. Second-class postage paid at New York, NY. Postmaster: Please send address changes to: *Rotunda*, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

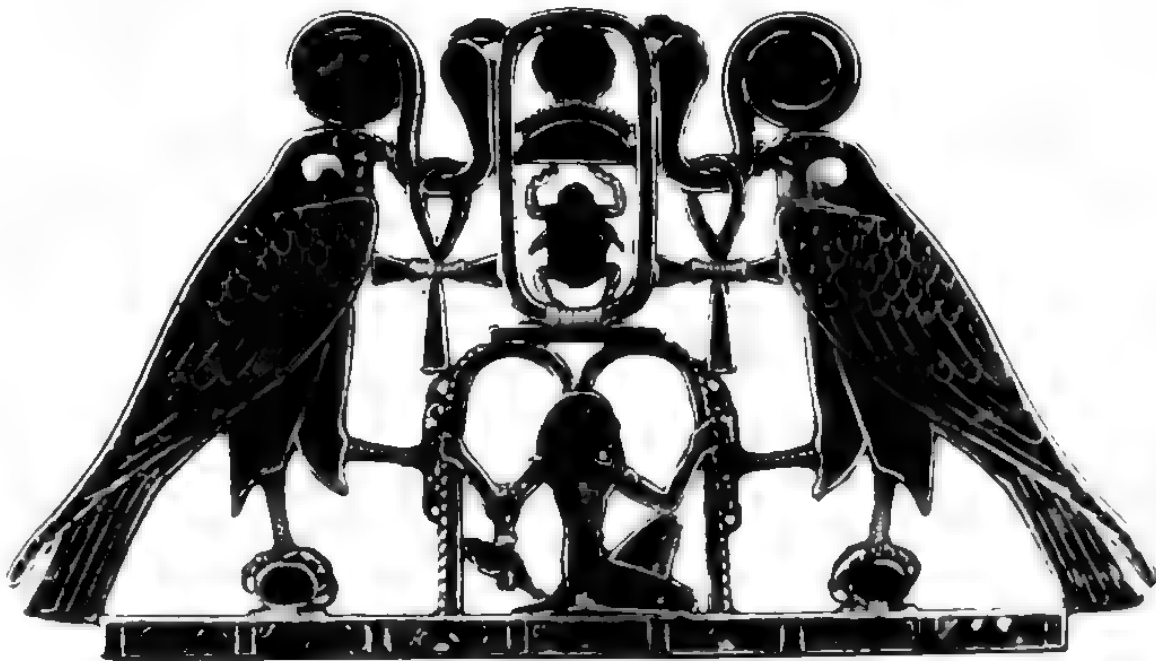
Statement of ownership, management, and circulation. Title of publication: *Rotunda* (ISSN 0194-6110). Date of filing: Sept. 29, 1993. Frequency of issue: Monthly except for July/August issue. Number of issues published annually: 11. Annual subscription price: \$50 a year for Participating Members, \$100 a year for Contributor Members. Complete mailing address of known office of publication: Central Park West at 79th Street, New York, NY 10024-5192. Complete mailing address of the headquarters or general business offices of the publishers: Same. Publisher: L. Thomas Kelly, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Editor: Donna Bell, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Managing Editor: None. Owner: American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. Known bondholders, mortgages, and other security holders: None. The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes has not changed during the preceding 12 months. Extent and nature of circulation: (A) signifies average number of copies of each issue during preceding 12 months, and (B) signifies average number of copies of single issue published nearest to filing date. Total number of copies: (A) 33,570 (B) 39,252. Paid and/or requested circulation — sales through dealers and carriers, street vendors, and counter sales: (A) None (B) None. Mail subscription: (A) 32,586 (B) 38,452. Total paid and/or requested circulation: (A) 32,586 (B) 38,452. Free distribution by mail carrier, or other means — samples, complimentary, and other free copies: (A) 866 (B) 500. Total distribution: (A) 33,452 (B) 38,952. Copies not distributed: (A) 118 (B) 300. Return from news agents: (A) None (B) None. Total: (A) 33,570 (B) 39,252. I certify that the statements made by me above are correct and complete. (signed) Donna Bell, Editor. Printed by Waldon Press, Inc., New York.



A Day with the Dinosaurs

Ancient Egyptian Jewelry

Thursday, January 6
7:00 p.m.
Kaufmann Theater
\$6 for Members, \$9 for non-Members



Pectoral (chest ornament) belonging to Princess Sit-hathor-yunet, the daughter of Pharaoh Sesostris II, who ruled during the twelfth dynasty (c. 1900-1870 BC)

The symbolism of ancient Egyptian jewelry is the focus of a Members' program presented by Robert Steven Bianchi, a former J. Clawson Mills Fellow at the Metropolitan Museum of Art. The slide lecture will explore the materials used in the creation of ancient Egyptian jewelry. Focusing on chest ornaments

found in the tomb of Tutankhamen, Bianchi will explain the symbolic properties of these materials and the ways in which color enhances their symbolic value.

Bianchi served as curator of the Egyptian Department at the Brooklyn Museum for 15 years, during which time he organized the international

loan exhibition *Cleopatra's Egypt — Age of the Ptolemies*. His latest book, *Inside the Tomb of Nefertiti*, was published last year. (Bianchi will also offer a one-day symposium on ancient Egyptian sculpture; see the related feature below.)

Use the coupon at right to register.

Members' Symposium

Ancient Egyptian Sculpture

Saturday, January 22
10:30 a.m.-3:30 p.m.
\$60, and open only to Participating and Higher Members

A one-day symposium will trace the history of Egyptian sculpture, from practical factors such as the quarrying and transportation of the stones to aesthetic considerations such as the symbolic relevance of statuary to Egyptian society and the development of sculpture through the eighteenth dynasty and beyond.

The symposium will be presented by Robert Steven Bianchi, who will also host a Members' program on ancient Egyptian jewelry (see the related article above)

In the first lecture, "Stones and Processes," Bianchi will offer an overview of the variety of stones used in ancient Egyptian statuary and the sources for these stones. He'll use information from pictorial representations found in

tombs and temples to describe the methods of extracting stones from quarries, transporting them, and sculpting them into statues.

"Sculpture and Symbolism," the second lecture, presents Egyptian civilization in terms of its cultural symbolism. Bianchi will explore the connotations of stones such as quartzite, which is charged with solar implications and thus an appropriate stone for images relating to Amun. He'll also discuss the significance of statue placement within ancient monuments.

The concluding lecture will define the development of ancient Egyptian sculpture as a dialectic between tradition and innovation. Bianchi will focus on the art of the eighteenth dynasty, which fea-

tures the best evidence of this dialectic, particularly with the Amarna Period of Akhenaten and its aftermath. Sculptural traditions are defined by the elite ruling class, at the head of which is the pharaoh, and each succeeding generation inherits the sculptural norms established by its predecessors. Bianchi will suggest ways in which the inherited sculptural traditions of the early eighteenth dynasty might be modified in order to create the seemingly new styles and forms of the Amarna Period.

The lectures will take place from 10:30 a.m. to 12:30 p.m. and 1:30 to 3:30 p.m. A buffet lunch is included in the fee. Use the coupon on page 5 to register, and please note that tickets are available only by mail.

December Members' Programs Coupon

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Total amount enclosed: _____

Please make check (if applicable) payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: December Members' Programs, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192. **Telephone reservations are not accepted. No refunds or exchanges.**

Unless otherwise indicated, no more than eight tickets may be ordered for a program. Participating Members are entitled to four tickets per program at the Members' price, Higher Members are entitled to six tickets, and Associate Members are entitled to one ticket.

Endangered Species. Friday, December 10, 7:00 p.m.

Number of free Members' tickets
(no more than 2, please): _____
Number of additional Members' tickets at \$5
Number of non-Members' tickets at \$8: _____
Total amount enclosed for program: _____

Origami Holiday Workshops. Saturday, December 11
Please indicate workshop level and a first, second, and third choice of times.

____ Young Children's Workshop
____ Beginners' Workshop
____ Intermediate Workshop
____ 10:30 a.m. ____ 11:30 a.m.
____ 2:00 p.m. ____ 3:00 p.m.
Number of Members' tickets at \$2.
Total amount enclosed for program: _____

Valley Forge. Wednesday, December 15, 7:00 p.m.

Number of Members' tickets at \$7: _____
Number of additional tickets at \$10: _____
Total amount enclosed for program: _____

Ancient Egyptian Jewelry

Thursday, January 6, 7:00 p.m.
Number of Members' tickets at \$6: _____
Number of additional tickets at \$9: _____
Total amount enclosed for program: _____

The Coral Reef at Night. Tuesday, January 11, 7:00 p.m.

Number of Members' tickets at \$7
Number of additional tickets at \$10
Total amount enclosed for program: _____

An Initiation Kut. Friday, January 14, 7:00 p.m.

Number of free Members' tickets
(no more than 2, please)
Number of additional tickets at \$5: _____
Number of non-Members' tickets at \$8: _____
Total amount enclosed for program: _____

Sea Monsters. Thursday, January 27, 7:00 p.m.

Number of Members' tickets at \$8: _____
Number of additional tickets at \$11: _____
Total amount enclosed for program: _____

Shoestring Players. Saturday, January 29

Indicate a first and second choice
____ 1:30 p.m. ____ 3:30 p.m.
Number of Members' tickets at \$6: _____
Number of additional tickets at \$10: _____
Total amount enclosed for program: _____

NOTE: Orders received less than ten days before show dates will be held for pick-up at the door on the day of the program if tickets are still available. If an event is sold out, you will be advised in writing or by phone and your check will be returned. Babies in arms or strollers will not be admitted to programs.

The Shoestring Players Present

Ladders to the Sky

Saturday, January 29

1:30 and 3:30 p.m.

Kaufmann Theater

\$6 for Members, \$10 for non-Members

Ages 5-12



The Shoestring Players

The ever-popular Shoestring Players return to the Museum next month for *Ladders to the Sky*, an energetic performance of four folktales from around the world. The players combine dance, acting, and storytelling with a touch of mime, singing, and stand-up comedy in their performances. These original adaptations of less-familiar folktales are certain to captivate young audiences. Shoestring productions use only minimal costumes and no sets at all, calling on the audience's imagination as the players create fountains with their fingers, beds with their bodies, a boiling caldron with their voices, and much more.

In "Water of Life," an adventure from Germany, a prince journeys far and wide to find a cure for his ailing father. Undaunted by jealous brothers and banishment from his kingdom, the brave prince shows selfless generosity to an old woman and finds his reward in an enchanted castle.

A comedy from Russia, "Pampalche of the Silver Teeth" is the story of a beautiful young woman with a smile so bright it blinds all beholders. Her fisherman father has an unfortunate meeting with an ogre that

results in Pampalche's betrothal, and in a wild and hilarious chase the heroine is pursued to a happy ending. "Ladders to the Sky," a drama from the Northwest Coast Indians, tells the ancient tale of Lupan and Lupanwenza, the father and mother of all people. One evening, as the sun is setting, Lupanwenza is lured into the night sky by Snoqualme, the spirit of the night. Lupan builds an arrow ladder to the stars to save her, and they escape with Snoqualme hot on their trail. Lupan fools Snoqualme, shattering the arrow ladder, and Snoqualme is trapped forever as the face of the moon.

In the Sicilian comedy "Meatloaf," Ninetta longs for a handsome prince while she helps her aunt, Zia Maria, make the perfect meatloaf. While Ninetta daydreams, a shaggy dog steals the meatloaf, and Ninetta chases the dog into Prince Guido's garden, where she finds love at first sight.

The program is about an hour long, with a brief intermission, in which actors and audience participate in a creative-dramatics adventure. Use the coupon on page 3 to register.

The Coral Reef at Night

Tuesday, January 11

7:00 p.m.

Kaufmann Theater

\$7 for Members, \$10 for non-Members

"Nothing," asserts marine biologist Joseph Levine, "can fully prepare you for night diving in a tropical sea. Properly equipped, you float, weightless, in an alien medium. Without the sun overhead, the distinction between 'up' and 'down' becomes a concept rather than a reality."

"Water that beckons invitingly by day greedily swallows the beam of even the strongest underwater searchlight, limiting vision to an uncomfortably small sphere. Anything beyond the reach of that light is unseen and unseeable. And what your flashlight does reveal assures you that you're not in Kansas (or, for that matter, Manhattan) anymore. For darkness transforms the brightly colored, whimsical daytime reef into a

murky, alien world, filled with ambiguous shapes and brooding shadows."

Levine will introduce Members to this little-known shadow world, using breath-taking photographs by underwater photographer Jeffrey Rotman and describing personal observations. At *The Coral Reef at Night* he'll discuss the transformations that occur as afternoon fades first to twilight and then to total darkness. With darkness comes "rush hour" on the reef, when aquatic commuters change shifts in an undersea metropolis with no police force, no lights on streets or in buildings, and no social code governing behavior. The resulting struggle between predator and prey has shaped the most prolonged and elaborate changing of the guard in

the natural world. In addition to describing the delights and the perils of diving at night, Levine will explain why night diving with a camera can be an underwater photographer's dream come true.

A writer, filmmaker, and science educator, Levine is vice president of Boston Science Communications and an associate in the Fish Department at Harvard University's Museum of Comparative Zoology. His research on the physiology, ecology, and evolution of vision in aquatic animals, conducted between Harvard and the Marine Biological Laboratory in Woods Hole, has appeared in journals such as *Science* and *Scientific American* and in several books.

Use the coupon on page 3 to register.



Bigeye, a nocturnal visitor to the coral reef

Sea Monsters during the Age of Dinosaurs

Thursday, January 27

7:00 p.m.

Kaufmann Theater

\$8 for Members, \$11 for non-Members

During the Mesozoic Era (approximately 245 to 65 million years before present), the biggest predators in the world's oceans were reptiles. Although not related to the dinosaurs inhabiting the land environments, some of the aquatic reptiles were almost as large, reaching lengths of 40 feet. Ichthyosaurs, plesiosaurs, geosaurs, and mosasaurs were the prehistoric counterparts of today's whales, dolphins, and sea lions.

The first ichthyosaurs to appear on earth had a build similar to that of geosaurs and mosasaurs, which appeared much later in the Mesozoic. These were long-bodied, crocodile-like predators

that exhibited many adaptations for rapid acceleration. They probably used an ambush mode of attack to capture prey, lying in wait for their quarry and capturing them with a quick lunge. The later ichthyosaurs, however, displayed several adaptations for fast, continuous swimming, including a streamlined shape, a dorsal fin, and a crescent-shaped tail. Their superficial resemblance to living dolphins is striking and suggests that ichthyosaurs, like dolphins, were pursuit predators, swimming over large areas in search of prey. The plesiosaurs include both pursuit and ambush predators. They were unique

among the marine reptiles in that they swam with two pairs of wing-shaped limbs for underwater "flying."

Paleontologist Judy Massare, who teaches earth science at SUNY Brockport, is a specialist in the study of extinct marine reptiles. She'll talk with Members about her investigations into the tooth shape and the biomechanical aspects of swimming in prehistoric aquatic predators and the ways in which these studies reflect interesting patterns of extinction and ecological replacements.

Use the December Members' programs coupon on page 3 to register for the program.

Members' Workshop

Identifying Rocks and Their Minerals

Wednesdays, January 19 and 26
5:30-7:30 p.m.
\$40, and open only to
Participating and Higher Members
Ages 16 and up

For Members who can't tell an igneous rock from a sedimentary rock from a metamorphic rock, but would like to — here's the chance. Geologist Sidney Horenstein, the Museum's coordinator of environmental public programs, will host a workshop that shows how to identify and classify the major groups of rocks and how to recog-

nize the indicators of their geological significance. Participants will learn about the minerals that are the building blocks of rocks from actual specimens and Museum exhibits. After the two-part workshop they will not take any rock for granite. Use the coupon below to register. Tickets are available only by mail.



Manhattan mica schist along Riverside Drive

Membership Workshops and Tours and The Winter Revels. Use this coupon to register for *Identifying Rocks and Their Minerals* and *Members' Symposium on Ancient Egyptian Sculpture*. Indicate a first and second choice of times for *Members' Guided Tours of the Forbes Magazine Galleries*. Indicate a first, second, and third choice of dates for *The Winter Revels*.

Name(s) of program(s) _____

Number of tickets and price (please indicate which program if more than one): _____

Total amount enclosed: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please make check payable to the American Museum of Natural History and mail with a **self-addressed, stamped envelope** to: *Workshops and Tours, Membership Office, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.*

Members' Guided Tours of the

Forbes Magazine Galleries

Thursday, January 20
11:00 a.m. and 3:00 p.m.
\$10, and open only to Participating and Higher Members
Ages 16 and up

"My father loved collecting, and my brothers and I share this passion," wrote publisher Malcolm S. Forbes, Jr. "Collectibles are not inanimate objects but are stimuli for the imagination. . . . That's what makes these galleries unique: they bring things to life."

Members can venture through an imaginative world of toy soldiers and boats, trophies, presidential memorabilia, and Fabergé luxury items on guided tours of the *Forbes Magazine Galleries*.

They'll see a history of the toy soldier in a series of dioramas and vignettes, featuring inch-high Aztecs and conquistadors, cowboys and Indians, jousting knights, and GIs and Doughboys. The galleries' trophies range from the prize for the best pen of White Leghorn chickens at the Northampton Egg Laying Trials to a variety of urns, trophies, and loving cups.

Selections from the magazine's 3,000 American historical documents and related items are featured among the exhibition of presidential papers. Highlighting the larger gallery are four miniature



A miniature of Thomas Jefferson's bedroom and study at Monticello (scale: 1 inch to 1 foot), on display among the presidential manuscripts and memorabilia

rooms — Washington's head quarters for the Battle of Yorktown, John Adams' kitchen law office in Braintree, Jefferson's study at Monticello, and the dining room of Grant's Illinois house.

Twelve of the famed imperial Easter eggs made by the House of Fabergé for the last two czars of Russia are among the more than 300 fantasies and *objets de luxe* on display. This selection of treasures made under the

direction of master jeweler/goldsmith Peter Carl Fabergé is from the largest private collection of his firm's work in the world.

The tours, which will last approximately one hour, will be led by a curator. The galleries are located on the ground floor of the Forbes Building, 62 Fifth Avenue, at the corner of 12th Street. Use the coupon below to register, and please note that tickets are available only by mail.

An Initiation Kut for a Korean Shaman

Friday, January 14
7:00 p.m.
Kaufmann Theater
Free for Members,
\$8 for non-Members

When Korean women need to honor household gods, expel ghosts, or solve other problems rooted in the supernatural, they sometimes consult shamans. These professional contacts with the spirit world are introduced to their vocation at a ceremonial *kut*, after which they serve as apprentice spirit daughters to experienced shamans, learning chants, dances, and ritual lore.

Anthropologist Laurel Kendall will show Members her film, *An Initiation Kut for a Korean Shaman*, in which they'll see a *kut* and learn of the events leading up to it. Thirty-two-year-old Chini is convinced that she is destined to be a shaman and that she will know only hardship and misery until her



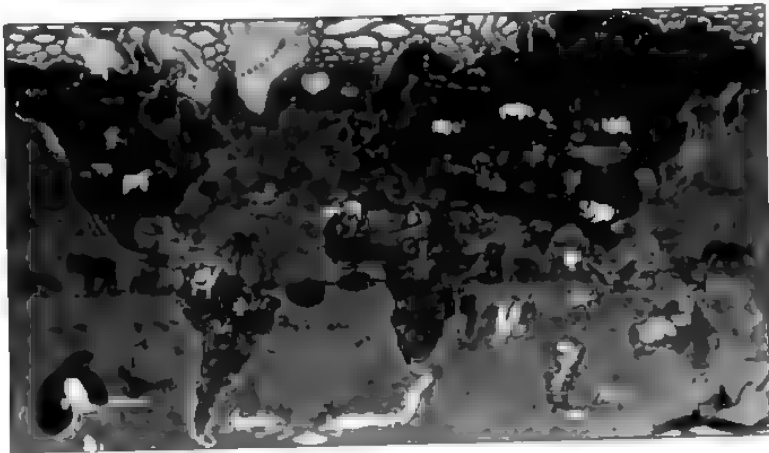
Filming the ceremony

successful initiation. At this ritual, Chini must demonstrate her ability to perform like a shaman, shouting out the spirits' revelations. Her teachers coax, scold, and instruct her, revealing their own sense of what it means to become a shaman and to perform a *kut*.

A curator in the Department of Anthropology, Kendall is the author of *The Life and Hard Times of a Korean Shaman* (1988) and *Shamans, Housewives, and Other Restless Spirits* (1985), both from the University of Hawaii Press. She began her observations on Korean society in 1971 as a

Peace Corps volunteer, and since 1976 she has worked as an anthropologist, focusing on the role of women in contemporary and traditional Korean culture. Her initial research on women and ritual led her to a study of contemporary marriage practices, and she is currently working on a manuscript, *Getting Married in Korea: Of Gender, Morality, and Greed*.

The 1991 documentary, which is 37 minutes long, was filmed by Kendall and Diana Lee. Kendall will introduce the film and answer questions from the audience afterward. Use the coupon on page 3 to register.



its development, its peoples, and its future. Participants will visit all seven continents, the ends of the earth, and the surrounding oceans.

Although these tours are free, Members should reserve spaces by calling the Volunteer Office at (212) 769-5566. Space is limited to 25 people per tour.

Spotlight Tours

The Volunteer Office offers a series of Spotlight Tours, which are conducted by professionally trained Volunteer Highlights Tour guides. Tours depart from the second floor between the Roosevelt Rotunda and the Hall of African Mammals. For further information call (212) 769-5566.

The World Tour

**Saturdays,
Dec. 11 and Jan. 22
6:30 p.m.**

**Sundays,
Dec. 12 and Jan. 23
1:00 p.m.**

Travel around the world in 80 minutes on the American Museum's World Tour, which will feature aspects of geology, astronomy, paleontology, biology, and ecology. On this tour participants will examine the planet — its origin,

Sign Language Tour

Natural History of the Holidays

**Saturday, Dec. 18
1:45 p.m.**

At the end of one year and the beginning of another, cultures around the world celebrate in a variety of ways, many of which are rooted in natural history. This annual holiday history tour will trace the origins of festive symbols and traditions. By searching for the meaning behind today's customs, the tours will piece together the meaning and spirit of the holiday season.

Global Cultures in a Changing World

The Education Department offers a series of programs that celebrate diverse cultural groups and their traditions. This month's programs are presented in conjunction with the conclusion of the United Nations' observance of the Year of Indigenous Peoples.

No tickets are necessary for these free programs, but seating is limited and available on a first-come, first-served basis. For further information call the Education Department at (212) 769-5315.

Indigenous and "Mestizo" Music and Dance of the Andes

**Wednesday,
December 1
7:30 p.m.
Main Auditorium**

The world-renowned group Inkay will perform native and "mestizo" music and dance from the mountains of Bolivia, Peru, and Ecuador. Using wind and percussion instruments, they'll play ancient music still performed in South America. Inkay will also demonstrate European influence in Andean music by

playing "mestizo" music on stringed instruments such as charangos, mandolins, harp, and bandurria, and they'll perform popular dances from the Andean region.

Latin American Film Program: Five Centuries Later

**Tuesday,
December 7
7:00 p.m.
Kaufmann Theater**

Guatemalan Indian Rigoberta Menchu, the 1992 Nobel Peace Prize winner, is featured in *Five Centuries Later*, an examination of the current status of Central American aboriginal civilizations. The film portrays the ways in which Central American Indians have struggled to preserve the few surviving traditions of their once-rich civilization, and it considers the possible fate of agrarian communities confronting a shortage of arable land.

Five Centuries Later is a 1992 production of the National Film Board of Canada. The film is 54 minutes long.

Leonhardt People Center

1:00–4:30 p.m.

December 4 and 5

Music of the Indigenous Caribbean. Through music and song, Robert Borrero and Company demonstrate the continuance of Native American culture and tradition in Boriken (Puerto Rico) and throughout the Caribbean.

The Columbian Change. In this slide-illustrated presentation Bobby Gonzalez examines the cultural and biological consequences of 1493, the year Christopher Columbus landed on the island of Boriken.

Preserving Native Traditions. Christina Bryant uses slides and puppets to relate how native people used to live and care for the natural environment and discusses the desirability of reclaiming these ways.

December 11 and 12

Indigenous Dances of Mexico. Members of Mexico: *Images and Traditions* wear colorful costumes as they perform dances of the native peoples of Mexico.

Through Native Eyes. Tchin examines difficulties facing native peoples in contemporary American society, including unrealistic expectations, misconceptions, and Hollywood's cultural misrepresentations.

Indigenous Folklore of Latin America. Argentina Palacios recounts tales of native peoples of Guatemala, Peru, and Panama.

Programs for December 18 and 19 are to be announced. The People Center will be closed on December 25 and 26.

One in a Billion



As many as 50,000 baseball-sized meteorites fall to earth each year but because most of them fall in remote areas, only about 1 in 1,000 is ever found. The chances of a meteorite's landing in a city and hitting an object are one in a billion — but that's exactly what happened last year. In October of 1992 a football-sized meteorite crashed through the trunk of a 1981 Chevrolet Malibu, leaving a 6-inch crater in the gravel drive-

way and surprising some neighbors. *Celestial Fender Bender: The Peekskill Meteorite*, on display in the 77th Street Lobby, features the car, a cast of the meteorite, and a portion of the actual meteorite. This display includes an analysis of the meteorite's nature and source.

This exhibition, which is on display through next month, is made possible by the generous support of the Arthur Ross Foundation.

Member-Get-a-Member

What could be better than sharing the benefits and privileges of Participating membership with friends and relatives?

Use the form below to recommend friends or relatives for Museum membership, and we'll send them information and an application. When someone you recommend for membership becomes a Participating Member of the Museum, we'll thank you with a \$10 coupon to apply toward your next Participating membership renewal. This form must be used to qualify for the \$10 coupon.

Membership Services, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024-5192.

These folks may be interested in Participating membership:

1. Name: _____

Address: _____

City: _____ State: _____ Zip: _____

2. Name: _____

Address: _____

City: _____ State: _____ Zip: _____

My name is: _____

Address: _____

City: _____ State: _____ Zip: _____

The programs presented by the Museum's Education Department are made possible with grants from the Lila Acheson Wallace Fund at the New York Community Trust, Henry Nease Foundation, Inc., the Leventenberg-Corner House, the Vidale Foundation, Maricano Foundation, Samuel and May Rudin Foundation, William Randolph Hearst Foundation, Howard Hughes Medical Institute, S.H. and Helen R. Schriber Family Foundation, Inc., Norman and Rosita Winston Foundation, Chase Manhattan Bank, Citicorp/Citibank, Chemical Bank, New York State Council on the Arts, Edward S. Moore Foundation, Inc., and the family of Frederick H. Leonhardt.

TZMG

Current Exhibitions



Antarctica

The history and wildlife of Antarctica are portrayed in a dramatic new exhibition. Penguin dioramas, a mummified seal, three-dimensional models of ice features, and tools used by people who have lived and worked on the continent are among the displays in Gallery 3. Through January 2.

Origami Tree

Don't miss the Origami Holiday Tree, on display on the first floor of the Roosevelt Memorial Hall through January 9. Be sure to stop by the teaching table, where volunteers instruct visitors in the fine art of folding.

Cuba: Nature of an Island

Photographs and specimens from the American Museum's cooperative venture with the Museo Nacional de Historia Natural in Havana are on display in the Akeley Gallery on the second floor. Through January 3.

Librarian's Choice

An exhibit of rarities from the Museum Library's extensive collections is on display in the Library Gallery. *Librarian's Choice: Treasures from 124 Years of Collecting* features items from the Rare Book, Photographic, Film, Art, and Archives collections. The gallery is located on the fourth floor.

The Barosaurus

The world's tallest free-standing dinosaur exhibit is on display on the second floor of the Roosevelt Memorial Hall. A five-story-high *Barosaurus* rears up on its hind legs to protect its young from an attacking *Allosaurus*.

The Museum houses the world's largest and most comprehensive collection of fossil vertebrates, and work on a new exhibition area is under way on the fourth floor. The halls of Earth History, Late and Early Mammals, and Late and Early Dinosaurs are closed for renovations. The first of the new halls will open early next year.



Self-portrait of Titian Ramsay Peale (above) and archival photographs are on display in the Library Gallery

The Moveable Museum

The American Museum, in partnership with cultural organizations from all five boroughs, has launched a specially designed vehicle that transports the Museum's educational resources and exhibits to New York City schools, community centers, city parks, street fairs, and other neighborhood facilities. This classroom on wheels features artifacts and research specimens from the Museum's collections, videos,

models, and computers for on-site courses in the natural sciences, anthropology, and the arts.

The Moveable Museum's current exhibition is an adaptation of *Global Warming: Understanding the Forecast*, which was developed by the Museum and the Environmental Defense Fund. The exhibition explores the possible impact of a rise in the earth's temperature, depicts scenarios of climate changes

that have occurred in the past and those that could occur in the future, and details actions that individuals, communities, and nations can take to slow global warming.

The Moveable Museum is a joint initiative of the New York City Council, the Museum's Education Department, and the Chase Manhattan Bank. For further information call (212) 769-5304.

South Pacific Cruise

For nearly a century the American Museum has been active in exploring the far-flung islands of the South Pacific. In April 1994 *Discovery Cruises* will return to this area, following in the footsteps of such noted Museum anthropologists as Harry Shapiro and Margaret Mead, both of whose careers spanned most of this century. This cruise will explore two

island groups, the Marquesas and the Tuamotus. Each is dramatically different; the Marquesas are volcanic, with high, jagged peaks and deep, fertile valleys; the Tuamotus are low-lying atolls — circular reefs encircling shimmering blue lagoons.

In addition to experiencing the splendid natural beauty of Polynesia, participants will be offered insights from a team

of Museum experts on many aspects of the complex traditional cultures of these islands. The itinerary includes stops at Rangiroa, Takarua, Nuku Hiva, Ua Pou, Hiva Oa, and Fatu Hiva, each of which features a unique glimpse of the South Pacific. For further information, call *Discovery Tours* at (800) 462-8687 or (212) 769-5700 in New York State.

Dino-Mite Dinner Deal!

Prime Rib Dinner
with potatoes and vegetables
\$10⁹⁵

Every Friday and Saturday, 5:00-7:30 pm

Naturemax Dinner Theater Package
Includes a complete dinner entree,
appetizer or dessert and coffee, per person **\$21⁰⁰**

Hours

Lunch, Mon.-Fri: 11:30 - 3:30

Saturday and Sunday Brunch: 11:00 - 4:00

Dinner seating, Fri.-Sat: 5:00 - 7:30

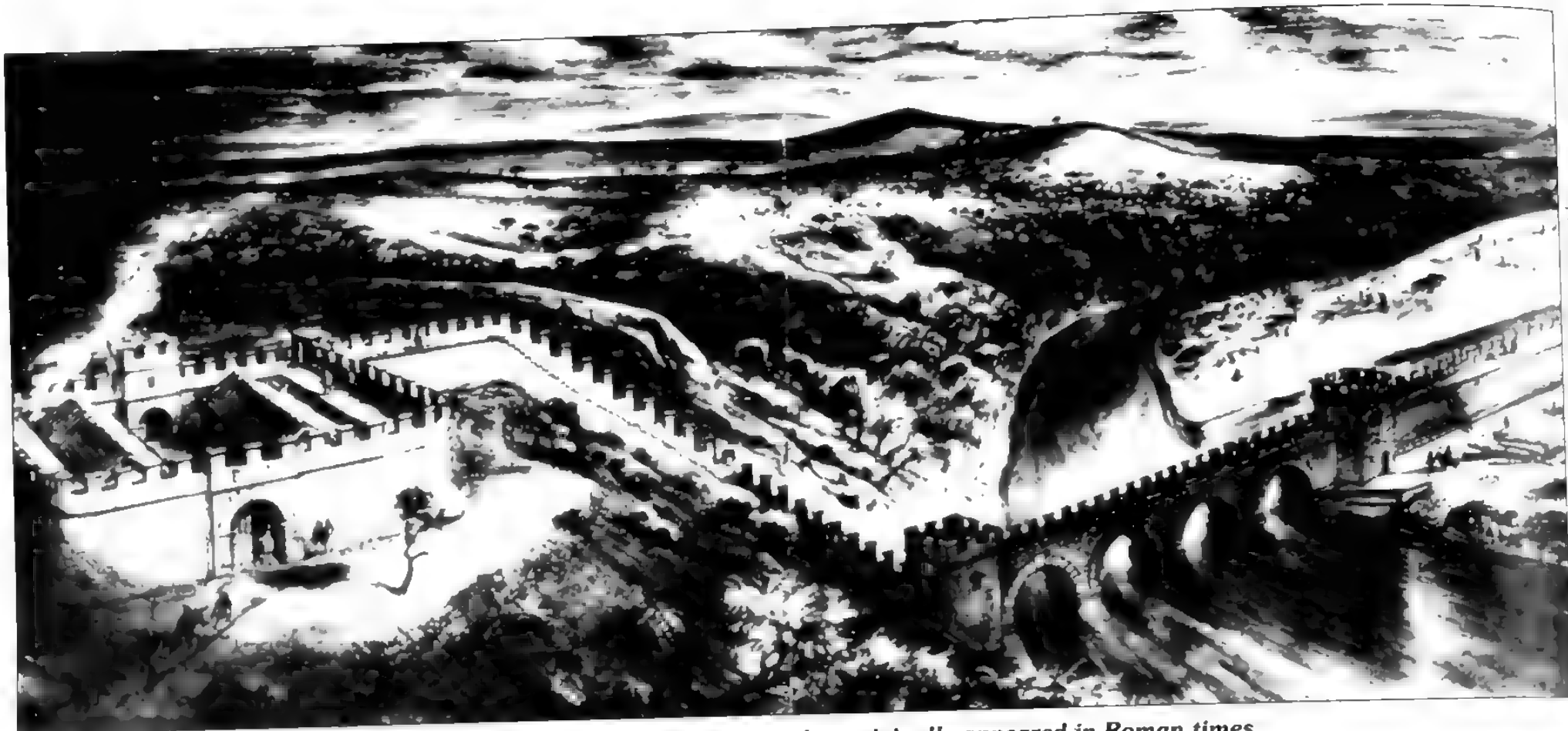
For Reservations call 212-874-3436



Walking the Wall

A Modern-Day Odyssey along Hadrian's Wall

by Paul F. Beelitz



Milecastle 49 and Willowford Bridge, as they originally appeared in Roman times

In the fall of 1991 Paul Beelitz, collections manager in the Department of Anthropology, traced the path of Hadrian's Wall in northern England. The following are his adventures — and misadventures — along the wall.

In AD 122 the Roman emperor Publius Aelius Hadrianus, delivered by trireme, made landfall on the island that was the northwesternmost extent of his empire. The Romans could not yet lay claim to all of what we now call England, however, for the northern tribes had proved persistent defenders of their homeland. For military reasons, and in keeping with the Roman desire to define all that they would call theirs, Hadrian ordered that a wall be built across the island from the mouth of the River Tyne on the North Sea in the east to the Solway Firth on the Irish Sea in the west, a distance of more than 70 miles. The wall's importance varied throughout the ensuing centuries, depending upon the military situation, until the Romans quit England in AD 383.

Hadrian's Wall, still extant in large sections, appeals to those who wish to combine a long-distance walk with an interest in archeology. After years of thinking about it I walked the wall from Newcastle-upon-Tyne in the east to Carlisle in the west. I later learned that it would have been entirely more rational to walk from west to east, but I wanted to be true to the Roman soldiers who landed in the east and walked west to their assignments along the wall.

I paid no tribute, however, to the Roman infantrymen who carried many pounds of raiment and equipment in the form of helmets, chest armor, swords, javelins weighted with three-pound lead balls, shields, and a pole laden with sleeping gear, utensils, food, and the occasional reminder of home on the sunny Mediterranean. My pack, the airline counter attendants informed me, weighed a mere six pounds.

A day was well spent in Newcastle-upon-Tyne's Museum of Antiquities, which is filled with Roman artifacts, a temple reconstruction, and stones from the wall carved with tributes and the names of cohorts, legions, and legionnaires. The museum's most interesting feature was a long-scale model of the entire wall as it was originally built and its surrounding topography. At every mile along the wall's length the Romans built stone milecastles, glorified gateways where tolls were collected and tariffs exacted. With barracks large enough for up to 50 men, milecastles covered an area about 60 by 80 feet and had staircases leading up to a parapet around the perimeter that gave access to a tower from which the frontier could be surveyed. The gates to the north were typically a pair of sturdy

wooden doors that opened outward, the better to dispatch patrols.

Milecastles were an integral part of the system, their northern face consisting of part of the curtain wall, which was up to 10 feet thick. The wall was probably over 15 feet high, including its parapet. Two turrets were built into the wall at the third-mile marks between the milecastles. These housed guards who could climb a ladder to the parapet, continuous through the three-component system of milecastles, turrets, and the wall itself. Disrupting the milecastle-turret-turret sequence, on an average of every seven miles, were forts. These were more extensive than milecastles, for they served as administrative centers and supply depots and were usually surrounded by settlements.

I compared the model with my "wall book." I'd laboriously cut an Ordnance Survey map into 5-inch sections, mounted them on 6" x 8" sheets of graph paper, and bound them. The right-hand side of each page had the OS map section with complete topographical detail and the left-hand side a more pedestrian road map section. Both sides had information gleaned from several sources about that particular section of the wall and listings of bed-and-breakfasts along the way. The book was designed to be read from back to front, or east to west, and each turn of a page meant an advance of 2.5 miles.

On Wednesday, after the first night in Newcastle, I had to travel three miles east on the north bank of the River Tyne. I took the train to the town of Wallsend, site of the Romans' fort SEGEDVNVM, whose foundation can still be seen. The region around Newcastle is industrialized, particularly at Wallsend, where the clamor of the Swan Hunter shipyards is a reminder that it's remarkable the foundation of SEGEDVNVM still exists, for the next extant bit of Hadrian's Wall is seven miles west. I walked four miles along the road where the wall used to be, past factories, auto supply stores, pubs, garages, and warehouses to downtown Newcastle, where Milecastle 4 and the PONS AELIVS, a wood bridge spanning the Tyne, used to be.

On Thursday I took a bus back to the point where my walk had ended. Hadrian's Wall used to be where the A6115 is now. After about an hour of walking west along a road bordered by apartment complexes, small businesses, semidetached houses, and schools, I came upon the remains of Turret 7B (the second turret west of Milecastle 7) in a residential area. Soon I was beyond the Newcastle area and looking for the B6528, the road that currently occupies the wall's course. This was the first of many occasions when highway entrance and egress ramps were crossed, a dangerous proposition for Americans, who tend to look the wrong way when negoti-

ating traffic in England. Still worse, the highway numbers on the signs weren't matching up to those in my book, and I had to trust my sense of direction. The area was mostly rural until I arrived in the small town of Wallbottle, where I stopped for the last drink I was to have for some time to come.

In Heddon-on-the-Wall, between Turret 11B and Milecastle 12, there is a lovely 200-yard section of the wall. South of the road and surrounded by verdant grass, the wall's gray stones are smooth from centuries of rain and wind. It's the first substantial section of the wall; the stones making up the north and south faces are dressed, and the area between them is filled with rubble. It's also the first place where the vallum — an earthwork that runs the entire length of Hadrian's Wall on the south — can be seen. In total it is 40 yards wide with a central depression 3 yards wide, flanked by continuous mounds. The vallum provided security for the southern side of the wall; it encouraged civilians, at least some of whom were not fond of the Romans, to approach the wall only at the causeways along the southern gates of the milecastles.

I was well along the road before coming upon a menacing Bridge Out sign. Not only would I have to retrace my steps for a mile or so, but also I'd have to find an alternate route. The overpass spanned the A69, a major highway, on which workers wielding heavy equipment were making major repairs. The A69 roared underneath, but the workers generously allowed me to cross an intact but tenuous section of the overpass.

My troubles soon began. At this point Hadrian's Wall exists not at all, for its course is entirely taken up by the B6318. A highway with one lane in each direction and no shoulder was hardly the place to take a safe walk. I should have been arrested for endangering my own life as well as those of motorists who sped at me from both directions in excess of 70 mph. With each passing truck I endured two shock waves of violently disturbed air: the first pushed off the vehicle's front and the second dragged from its rear. Both bursts were accompanied by gravel and road debris gone ballistic.

I walked along the right side of the highway so that I'd see oncoming vehicles in time to dive into the thick brush at roadside. After dozens of leaps into the brush I considered sticking out my thumb. I didn't, because my goal was to walk the length of the wall — even where it no longer existed — to Carlisle. According to my book it was only two miles to Harlow Hill, where Milecastle 16 used to be, and where surely one building in the small cluster that made up the town would be a pub.

My greatest fear in preparing for the trip had been rain, which was supposed to fall on more days

than not in October. Instead of rain, a wind came howling in from the west at up to 50 mph, as a weather broadcast that night cheerfully reported. Walking into the wind required extraordinary effort, especially when I had truck-dodging on my mind. If there had been even the remains of the vallum in this area, I could have walked along one of its mounds where the drainage was good. Glimpses of the other side of the brush revealed only muddy farmland that would have been even more difficult to negotiate.

Finally, I made Harlow Hill, but it offered no amenities. The book indicated that East Wallhouses, on the site of Milecastle 18, had an even smaller cluster of buildings. It was past noon, and if there were no sustenance there, I'd hitchhike to the first place that offered a repast. I took a break from the highway and walked across farmland to the north. Walking through the low dead crops was as much a hindrance as walking into the wind, I was hungry, and my mouth started to feel like parchment. Ahead were two small bodies of water fed by the Whittle and Welton burns, the Sparrow Letch, and the Whittledean Watercourse.

When I got there, I found that the water was far below and was probably a reservoir since men were building a wall around parts of it by encasing cobbles in chain-link fencing. I couldn't ask the workers' permission to cross the site because I couldn't talk above a low rasp and the wind would have drowned out anything I could have said. My left arm pointed in the desired direction and the men nodded their assent, albeit with some quizzical looks.

More farmland preceded East Wallhouses, which I traversed with great difficulty. In the distance I saw multicolored pennants, the kind displayed at car dealerships, vigorously flapping in the wind. I was certain I'd find at least something to drink before hitching a ride to food.

Happily, it was the Robin Hood Inn. They were closing for the afternoon when I rasped for a pint of bitter and inhaled it while the keeper drew another. The cook was called in from another room (probably from his post-lunch break) and asked to make up a fine beef pie.

Lessons learned today and confirmed by the keeper: 1) Don't walk the course of Hadrian's Wall from Newcastle-upon-Tyne to East Wallhouses. There's not much wall to see, and you'll spend all your time dodging lorries. 2) Every town on the map doesn't have a pub, so 3) carry a water bottle.

I had been too zealous in keeping down the weight of my pack. While I had another pint of bitter, the keeper filled an empty bottle with water. I left, making my way past the site of Milecastle 32, and turned south onto Dere Street to the Fox and Hounds Hotel, where I ate dinner and collapsed into bed.

On Friday morning I continued two miles south on Dere Street to CORSTOPITVM, a fort site in the town of Corbridge on the north bank of the River Tyne. Although it's not actually part of the wall, CORSTOPITVM was a worthwhile detour, for it served as an arsenal, a granary, and a supply depot for the frontier system. Special detachments of craftsmen lived there, and a town of about 35 acres grew around it. In the museum adjacent to the site is the Corbridge Lion, a carved stone fountainhead portraying a feline eating a stag it had just taken down, a popular Roman subject.

A well-preserved example of a Roman granary is part of the site. Granaries were typically about 100 feet long and 30 feet wide and built in pairs. Only the foundations can be seen; these illustrate the Roman technique of raising the floor several feet above ground, leaving chambers for air circulation, drainage, and rodent control.

To get back to the wall I would have to walk north up Dere Street from CORSTOPITVM's 500-foot elevation to the wall's 3,300-foot elevation over a distance of 2.5 miles. The wall's course continued under the wretched B6318, of which I'd had enough. I decided to head west along the Tyne, roughly following what used to be the route of the Stanegate, a strategic road built before the wall and extending as far west as Carlisle. I walked 8.5 miles along local roads to Grindon Hill, ate a sandwich from a newsstand, and then headed north for two miles on a little-used road through undulating pastureland. The dull roar in the distance signaled the B6318, but I knew that the highway would veer off to the southwest and I could look forward to a few days of the wall surrounded only by countryside.

By walking the Stanegate, I undershot Milecastle 23, the easternmost remains of a milecastle, and the fort CILVRNVM, which overlooks the River North Tyne. Up the hill on the other side of the B6318 was Sewing Shields Farm, a bed-and-break-

fast and working farm at an altitude of 900 feet. Here were the first picturesque views, since Sewing Shields overlooks the southern land that descends to the River Tyne and north toward Scotland, 25 miles away. I arrived at the farmhouse around 4 o'clock, and after checking in, went out again to walk east along the wall's course to see some of what I had missed.

The lady of Sewing Shields Farm made tea when I got back and asked, "Where are you eating tonight? There isn't a place to eat within miles of here." Hadn't thought about that, thus far I'd slept in places near restaurants. "Never mind," she said, "you'll eat here tonight." She and her sons ate their ham in the kitchen, as was their custom, and I was served the same in the sitting room. Her husband, whose Scot family went back some generations at Sewing Shields, came home at around 7:30 and ate his dinner in my company.

"You know, Sewing Shields' buildings were made with the stone from Hadrian's Wall," he said. "But don't be surprised, it's not all that unusual." I wasn't surprised, for throughout the world practical town and country folk have quarried ancient structures. I showed him my copy of *The First Man to Walk Hadrian's Wall*, by William Hutton, a reprint of an 1802 book sold at many places between Newcastle and Carlisle.

During the summer of 1801, the 78-year-old author perambulated over 600 miles through the north of England, visiting Roman sites with nothing but his umbrella, kitbag, and knowledge of his daughter's disapprobation. The antiquarian's main objective was his beloved "shattered Wall," which he walked from west to east and back. "I envied the people in the neighbourhood of the Wall," Hutton wrote, "though I knew they valued it no more than the soil on which it stood. I wished to converse with an intelligent resident, but never saw one."

The modern cover of the book shows him chastising two locals, one atop the wall with a dressed stone in his hands, ready to drop it into a wheelbarrow held by the other. Hutton lamented that if a farmer were to say, "The property is mine, and I have a right to direct it as I please," he could only reply, "It is an argument I can regret, but not refute." Even though parts of the wall still run through private property, it's now protected by the Department of the Environment.

The next day I passed through the wet woods surrounding Sewing Shields Farm and abruptly met the type of landscape that makes the north country so alluring. The rain barely obscured the view north from Sewing Shields Crag to the Broomlee and Greenlee loughs and the Cheviot Hills. The view west offered an exciting change: the gentler topography of previous days was replaced by the chasms and high crags of the northern Pennines. The Romans crowned these natural fortifications with Hadrian's Wall and could survey vast expanses of moor.

I quickly made VERCOVICVM, a well-preserved fort and civil settlement east of Milecastle 37. It was too early to be officially open to the public, but the gates were designed to be impregnable to sheep, not humans. Throughout the fort's remains, English Heritage labels identified and showed reconstructions of its gateways, hospital, commanding officer's building, latrines, barracks, and granaries. The civilian settlement to the south included the Murder House, where the remains of a man and woman from the fourth century were found. Both appeared to have been buried surreptitiously, since the business end of a sword was found in the man's ribs. The museum farther down the terraced slope wasn't open yet, so I continued west along the wall, unbroken for a mile west and including Milecastle 37.

From far below Milecastle 37 at the bottom of Cuddy's Crag came a cacophony of barking dogs, horns, snorting horses, and shouts: a fox hunt was in progress. It was unlike the edited hunts depicted on film, for there was no concerted line of charge in one direction. Instead, the hounds, horses, and scarlet tunics negotiated assorted obstacles in many directions. I counted 48 dogs before being interrupted by a couple on the path who told me not to worry (I hadn't been) because "they never catch the fox."

I spent the rest of the afternoon looking for lodgings and set out on the following day, Sunday. When I continued straight where I should have turned right, I went horribly wrong. Instead of walking along Haltwhistle Burn, as I'd intended, I ended up alongside Slaty Sike. Sike isn't in my dictionary, but the Slaty variety was a rivulet running through pasture, farmland, and woods. The land rose steeply on either side and was perpetually muddy from moisture and the daily effluence of local cattle.

There was a faint path in spots, but to avoid ankle-deep immersion in the mud I mostly stepped from one hummock or rock to another, with varying degrees of success. After climbing a few fences and passing through fragrantly coniferous woods, I came to a road that would lead to the B6318.

It had been quite a workout to reach the road, but I would need only to walk east along the highway and then north to Great Chesters, a distance of a mile and a half and a loss of half an hour. I reached for the wall book in my side pocket to confirm the route, but the book was gone and I felt sick.

When was the last time I looked at it? It had been a while; once I realized my route was Slaty Sike and not Haltwhistle Burn, the direction I needed to head was pretty clear. Where had I climbed fences? There were plenty of variables, for I had often climbed the same fence from one side to the other where thick woods made passage impossible. For a moment I thought of leaving the book behind. I had an uncut Ordnance Survey map of the wall in my pack, but it wasn't filled with jottings, information on accommodations and transportation, and the wall's history. Additionally, its tracing of the wall wasn't color-coded to indicate which sections were extant and which extinct. I had to retrace my steps along the sike exactly.

It wasn't long before I saw the book in the wet grass alongside a fence, laying face up in dangerous proximity to a mass of cattle dip. It was open to the pages with the map of Slaty Sike and was soaked around the edges, so I held it open while walking east along the B6318, and it was dry by the time I turned left off the highway and up the hill toward Great Chesters, also known as AESICA.

A farmer on an all-terrain motorized tricycle darted to and fro across the way to AESICA, chasing his cattle to the pastures du jour. AESICA was indicated on the map as extant but was in woeful condition. Fortunately, the site is protected by the Department of the Environment, so it's unlikely to deteriorate much further. Turret 45A and a good section of the wall are well preserved atop Walltown Crag, and I began a steep descent toward the area where the B6318 crosses the line of the wall and begins to run parallel to the north. The wall no longer exists in the countryside surrounding Greenhead, but a well-marked footpath took me over the convergence of the Toddle and Tipalt burns and through a picturesque golf course made more challenging by the intermittent existence of the vallum over a half mile stretch.

Milecastle 48 in Gilsland was the next to-last milecastle that still exists and the last and most interesting one that I saw. The steps once leading to the rampart still exist, and it was by projecting the flight's course that archeologists were able to determine the wall's 15-foot height. West of here I also saw my last two turrets, 48A and B, before coming to the Willowford Bridge, where Roman engineers built a bridge to span the River Irthing, which has now turned north across the wall's path.

The well-maintained path to the bridge crosses private property, and a box outside a stone house required a 20-pence deposit. The lady of the house took time out from serving Sunday dinner to her family to answer my questions about the river. If I couldn't ford the river, I'd have to walk east over the way I'd just come and then north to Gilsland proper, where a modern bridge would take me across the Irthing. I'd lost enough time that morning on Slaty Sike and didn't want to waste any more.

"Will it be possible to ford the river? I don't want to retrace my steps to get to Gilsland, but I also want to see the fort at Birdoswald."

"The river's not running too high, so I expect you might be able to cross it somewhere, but you'll get wet." She said this both to me and to family members, who nodded their affirmation.

The Irthing's course moved west over the centuries. The Willowford Bridge's eastern pier and abutment still stand in the middle of pasture, but their counterparts disappeared as the river cut its way deeper into the western bank. I walked south along the east bank looking for a place to cross. The river wasn't very wide, and a Department of the Environment guidebook said that "the river can generally be forded and the bank climbed, by the more energetic." I covered a quarter-mile of the east bank but there were no prospects. During my youth, my friends and I would spend days dumping rocks into the Rahway River until there was a thin dam just above the surface of the water that we could walk across. The children living around this section of the Irthing had no such inclination, however, and I was not to find a section sufficiently shallow and slow to afford a safe crossing.

continued on next page

Courses for Stargazers



ASTRONOMY: BASIC COURSES

Introduction to Astronomy

Eight Thursdays, beginning Jan. 13; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

A first course in astronomy, designed to introduce the many interesting aspects of the universe to those without a math or physics background. Topics include earth as a planet, the moon, the solar system, the stars, the Milky Way, galaxies, quasars, and black holes. Common observations such as planet motions and the rising and setting of the sun and moon are explained. No previous knowledge of astronomy is assumed.

Adventures in Astronomy

Five Saturdays, beginning Jan. 15; 9:40-11:40 a.m.
\$67.50 for Members
\$75 for non-Members

Confused about the difference between a star and a planet? Can't tell astronomy from astrology? Don't know Aquarius from Sagittarius or a black hole from a brown dwarf? Join us for a new Saturday course for the whole family (ages 10 and up). In the Sky Theater and in labs with astronomical equipment we will explore the birth and death of stars, the origin of the universe, the search for extraterrestrial life, and the current night sky.

Stars, Constellations, and Legends

Five Tuesdays, beginning Jan. 11; 6:30-8:10 p.m.
\$58.50 for Members
\$65 for non-Members

The lore of the sky is introduced with the Sky Theater's Zeiss projector, which will identify the prominent stars, constellations, and other sky objects of both Northern and Southern Hemispheres. The myths and legends of many cultures relating to the sky, as well as galaxies, star clusters, and nebulae found among the constellations, are illustrated. No prerequisites.

Celestial Highlights

Four selected Mondays: Jan. 3, Feb. 14, Mar. 21, April 18; 6:30-7:40 p.m.
\$36 for Members
\$40 for non-Members

This course will focus on the interesting and exciting events in the skies of the coming month. The night sky will be accurately simulated by the Zeiss projector in the Sky Theater, and students will learn how to find prominent constellations of the season and where and when to see gatherings of the moon and planets. The Planetarium's extensive collection of special effects will illustrate upcoming celestial events, including meteor showers and eclipses. Students will also learn about current space missions and how to find nebulae, star

clusters, and galaxies that are visible through binoculars or small telescopes.

Life Beyond the Earth: The Search for Life in the Cosmos

Eight Mondays, beginning Jan. 10; 6:30-8:40 p.m.
\$85.50 for Members
\$95 for non-Members

This course presents the reasons that many scientists believe there is intelligent life elsewhere in the universe. Topics include stellar evolution, theories of planet formation and development, origin of life, intelligence, problems of communications, and current investigations.

ASTRONOMY: INTERMEDIATE COURSE

Cosmology: The Big Picture

Four Thursdays, beginning Jan. 13; 6:30-8:10 p.m.
\$67.50 for Members
\$75 for non-Members

From the curvature of space-time and the creation of the elements to the fate of the stars and galaxies, cosmology is the study of the nature and evolution of the universe taken as a whole — the unity of the diverse manifestations of physical reality. Joseph Patterson of Columbia University will cover such topics as the cosmological assumptions, the nature of space and time, the Big Bang, the cosmic background radiation, the cold dark matter, and the great wall of galaxies.

The Invisible Universe

Five Wednesdays, beginning January 12; 6:30-8:10 p.m.
\$76.50 for Members
\$85 for non-Members

Beyond what the eye and modern optical telescopes can see lies a vast invisible universe — the universe of radio waves, infrared, ultraviolet, X-rays, and more. Using giant dish-shaped antennas continents apart and earth-orbiting satellites, astronomers are painting bizarre and fascinating portraits of planets, stars, and galaxies. In this course we'll use the latest images available to explore the invisible universe and see how such views complement and enrich our vision of the cosmos.

SCI FI

Science Fiction and Contemporary Society

Four Tuesdays, beginning Jan. 11; 6:30-8:40 p.m.
\$67.50 for Members
\$75 for non-Members

How do science fiction's imaginative visions reflect our own world? What methods do authors of fantastic texts use to mirror real-world contexts? This course will address these questions by focusing on science fiction's familiar classic writers (Asimov and Clarke), the revolutionary creators of the New Wave (Delaney and LeGuin), and exciting new voices (Butler and Tepper). Students will explore what science fiction has to say about social fact. Instructor Marleen Barr is a pioneer in the study of women and science fiction. A reading list will be distributed at the first meeting.

NAVIGATION: BASIC COURSE

Navigation in Coastal Waters

Eight Tuesdays, beginning Jan. 11; 6:30-9:00 p.m.
\$99 for Members
\$110 for non-Members

An introduction to piloting and dead reckoning for pres-

ent and prospective owners of small boats. The course provides practical chartwork and includes such topics as the compass, bearings, fixes, buoys and lighthouses, the running fix, current vectors and tides, and rules of the nautical road. Boating safety is emphasized. No prerequisites. Students are required to purchase an equipment kit.

NAVIGATION: INTERMEDIATE COURSE

Introduction to Celestial Navigation

Ten Mondays, beginning Jan. 10; 6:30-8:40 p.m.
\$99 for Members
\$110 for non-Members

This intermediate course is for those who have completed *Navigation in Coastal Waters* or who have equivalent piloting experience. The course covers the theory and practice of celestial navigation, the sextant and its use, and the complete solution for a line of position. Problem solving and chartwork are emphasized. Students are required to purchase a copy of *Sight-Reduction Tables for Marine Navigation, Volume 3* (Pub. No. 229).

Courses for Stargazers

I would like to register for the following Planetarium course(s):

Name of course: _____
Price: _____ (Please note that discount prices apply only to Participating and Higher Members.)

Class beginning: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Please mail this coupon with your check payable to the American Museum-Hayden Planetarium to: *Courses for Stargazers*, Hayden Planetarium, Central Park West at 81st Street, New York, NY 10024-5192. Registration by mail is strongly recommended and is accepted until seven days preceding the first class. For additional information, call (212) 769-5900, Monday-Friday, 9:30 a.m.-4:30 p.m. **No credit cards accepted. Do not include ticket requests or checks for American Museum programs.**

continued from previous page

The river turned west. To the south was a steep 200-foot rise through the Willowford Plantation. I would have to negotiate this and forget about seeing Milecastle 49 and Birdoswald (CAMBOGLANNA), the westernmost extant milecastle and fort, respectively. It would have been far better to head back east after examining the bridge and taking the modern bridge for passage to CAMBOGLANNA.

I ascended the forbidding and heavily wooded south bank 10 feet at a time in bursts of energy. Periodically, I grabbed at a tree long enough to gasp heavily and quickly for air. Rotten branches or trunks often broke away, sending me flailing at ground too slippery to give any purchase. Upon gaining the top of the plantation I discovered a devilish barbed-wire fence separating dark woods from

inviting open pasture. I found a sturdy tree, climbed it, jumped to the ground, and rolled to a stop. Gray clouds skirted rapidly across an even grayer sky and cows chewed their cud indifferently while I laid there for half an hour.

It was past 3 o'clock and I hadn't eaten since breakfast, so I left my bed and headed southwest, overlooking the Irthing far below. Across the river to the north I could see the high ground where Milecastle 49 and CAMBOGLANNA were perched. Along my side of the river I was treated to a dead sheep, well decomposed, and stretches of abominable mud before making Mains, where a footpath led me to the road to Low Row.

The wall was a mile north but all that was left were some turrets. In the lowlands west of the River Irthing the Romans at first built the wall entirely of

turf cut into 18" x 12" x 6" blocks. The reasons given for this vary: it may have been because the lime used for mortar was geologically unavailable west of the Irthing, or perhaps the Romans were in a hurry to finish the wall. In the ensuing years, the Romans supposedly completed this section of the wall with stone, presumably having transported lime to the building site. Yet none of the wall or even a lone turret stands west of here, so the evidence for the later construction of the wall in stone is sketchy.

On Monday morning I checked out of my hotel early and continued on the A69's shoulder for eight miles to Carlisle, whence I took the train to London. In all, I'd walked the distance from Milecastle 1 to Milecastle 65, with many a lengthy diversion south of the wall. West of Carlisle to Bowness, there are no remains at all.

Museum Notes

Hours
Exhibition Halls
Mon.-Thurs. & Sun.10:00 a.m.-5:45 p.m.
Fri. & Sat.10:00 a.m.-8:45 p.m.
Note: The Museum closes at 5:45 p.m. on Dec. 24 and 31
The Museum Shop
Mon.-Thurs. & Sun.10:00 a.m.-5:45 p.m.
Fri. & Sat.10:00 a.m.-7:45 p.m.
The Junior Shop
Mon.-Fri.10:00 a.m.-4:45 p.m.
Sat. & Sun.10:00 a.m.-5:45 p.m.
The Museum Library
Tues.-Fri.11:00 a.m.-4:00 p.m.
The Discovery Room
Passes are distributed at the first-floor information desk beginning at 11:45 a.m. Ages 5-10 Children must be accompanied by an adult
Closed on holidays and weekdays
Sat. & Sun.Noon-4:30 p.m.
The Natural Science Center
For children of all ages and their families.
Closed on Mondays and holidays
Tues.-Fri.10:30 a.m.-12:30 p.m.
and 2:00-4:30 p.m.
Sat. & Sun.1:00-4:30 p.m.

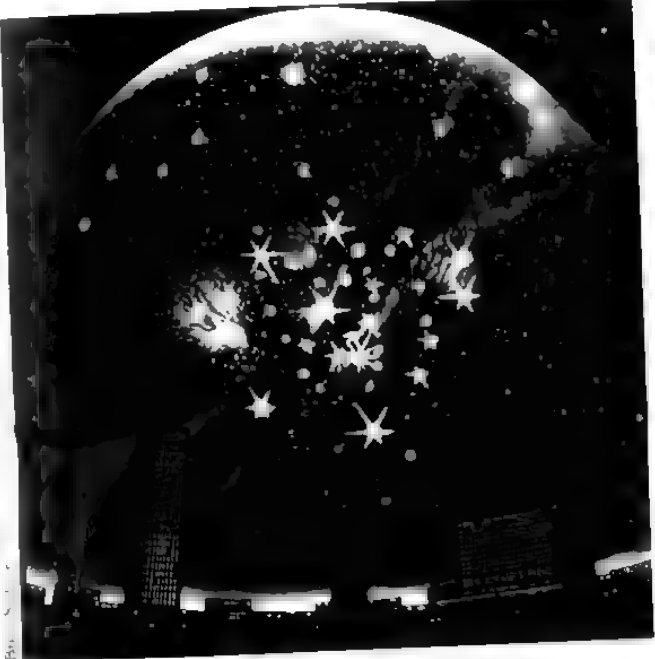
Museum Dining
Diner Saurus Fast Service Eatery
Daily11:00 a.m.-4:45 p.m.
Garden Cafe
Reservations: (212) 769-5865
Lunch: Mon.-Fri.11:30 a.m.-3:30 p.m.
Dinner: Fri. & Sat.5:30-7:30 p.m.
Brunch: Sat. & Sun.11:00 a.m.-4:00 p.m.
Whale's Lair
Fri.3:00-8:00 p.m.
Sat.Noon-8:00 p.m.
Sun. & most holidaysNoon-5:00 p.m.
Snack Carts (at 77th Street & on the first floor of the Roosevelt Memorial Hall)
Sat. & Sun.11:00 a.m.-4:00 p.m.

Naturemax
The Naturemax Theater presents Antarctica, a thrilling exploration of the highest, driest, coldest, and most mysterious continent on earth.
Showtimes for Antarctica are 10:30 and 11:30 a.m., 1:30 and 3:30 p.m. daily. Tropical Rain Forest, which portrays the 400-million-year evolution of these vanishing resources, is shown at 12:30, 2:30, and 4:30 p.m.
On Friday and Saturday at 6:00 and 7:30 p.m., Antarctica is shown on a double bill with Tropical

Rain Forest. Schedules and prices are subject to change without notice. Call (212) 769-5650 for further information.
Admission (Participating and Higher Members)
Adults: \$4 single feature; \$5.50 double feature
Children: \$2 single feature; \$3 double feature
Birthday Parties
Theme parties for young Members 5-10 years old are two hours long and held at 3:30 p.m. on Wednesdays, at 4:00 p.m. on Fridays, and at 11:00 a.m. or 2:30 p.m. on weekends. The group should be no fewer than 10 and no more than 20. The fee is \$275 plus \$15 per child. (The cost includes all materials, juice, ice cream, and favor bags. The cake is not included.) Call (212) 769-5606 for further information

Parking
The Museum's parking lot is located on 81st Street between Central Park West and Columbus Avenue. Space is limited and fees are \$12 for cars and \$11 for buses. The lot is open from 9:30 a.m. to 9:30 p.m. on Sunday through Thursday and from 9:30 a.m. to midnight on Friday and Saturday.
Call the Membership Office at (212) 769-5606 for information about alternative parking

Happenings at the Hayden



Holiday Concert

The Planetarium's Tenth Annual Holiday Concert Under the Stars will feature the New York Philomusica. On Wednesday, December 15, and Thursday, December 16, at 7:30 p.m., the performers will play a special selection of music from the baroque to the present and beyond. The Planetarium's magnificent starry sky, dazzling laser lights, and special effects combine to make this a unique holiday experience.
Participating and Higher Members are entitled to four tickets at \$15 each. Additional tickets may be purchased at the non-Members' price of \$18 each. For further information call (212) 769-5900.

Sky Show
Star of Christmas Through Jan. 2

At this holiday program, viewers gaze out on a clear winter's night and travel back nearly 2,000 years to explore the skies of the first Christmas. Just what led the Wise Men to Bethlehem? Was it a special star that no one else had seen before? A comet? Or something else? Join us for this special holiday tradition
Showtimes
Mon.-Fri.1:30 and 3:30 p.m.
Sat. and Sun.1:00, 3:00, and 5:00 p.m.
Orion Rendezvous...A Star Trek Voyage of Discovery
Climb aboard the starship Antares for a cosmic journey. Actor LeVar Burton joins the crew as Lieutenant Commander Geordi La Forge, the character

he plays on Star Trek: The Next Generation* Enter the twenty-fourth century and journey to a place where six suns blaze in the sky, and then voyage to a sun 100 million times bigger than our own. Discover where stars are born and explore the galactic graveyard of a star that died in one of the most powerful explosions in the universe. Space enthusiasts and Star Trek fans alike will know that they have gone where no planetarium audience has gone before
Showtimes
Mon.-Fri.2:30 p.m.
Sat.11:00 a.m. (except for Dec. 4 and Jan. 8),
2:00 and 4:00 p.m.
Sun.2:00 and 4:00 p.m.
The Planetarium is closed on Christmas Day.
Dec. 25. From Dec. 27 through 30 Star of Christmas will be shown at noon, 2:00, and 4:00 p.m.
Performance times for Orion Rendezvous will be 1:00 and 3:00 p.m.
Admission to the Sky Show for Participating and Higher Members is \$6 for adults and \$3.50 for children ages 2 to 12. Prices and schedules subject to change without notice. For non-Members' prices and additional information, call (212) 769-5100

Exhibition

Star Trek® Exhibition:
A Retrospective of the Sixties
Alien costumes, Starfleet uniforms, Enterprise models, and assorted props and photos from Paramount's original 1960s television series are on display in a special exhibition curated by the National Air and Space Museum. Explore the historical, political, social, and cultural themes incorporated into the weekly Star Trek® series. For information call (212) 769-5100.

Lecture

Frontiers in Astronomy and Astrophysics
On Monday, January 10, at 7:30 p.m. Catherine Garmany of the Joint Institute for Laboratory Astrophysics at the University of Colorado will present an illustrated talk, "Supernovas, Star Formation, and Us." Garmany will take a look at the incredible life cycles of stars and the curious links between the spectacle of stellar death and the creation of life in the universe.
This lecture is part of the Frontiers in Astronomy and Astrophysics series. Tickets are \$6 for Participating and Higher Members and \$8 for non-Members. Use the coupon at right to order tickets and for information about ticket availability and upcoming lectures call (212) 769-5900

Children's Shows

Wonderful Sky is a special Sky Show for preschoolers. Children sing along with images of their favorite Sesame Street Muppets as they learn about rainbows, the phases of the moon, sunsets, and stars. Sat., Dec. 4, at 10:30 and 11:45 a.m.,

and Sat., Jan. 8, at 10:30 a.m. Admission for Participating and Higher Members is \$6 for adults and \$3.50 for children. Members can purchase up to four tickets at the Members' price.
Shows usually sell out in advance; reservations, by mail only, are necessary. Make your check payable to the Hayden Planetarium (Attn: Wonderful Sky Central Park West at 81st Street, New York, NY 10024), indicate membership category and a first and second choice of showtimes, and include a self-addressed, stamped envelope and your daytime phone number. For additional information, call (212) 769-5900.
Robots in Space features Lucasfilm's R2D2 and C-3PO™ and has been created especially for children ages 7 to 12. Together with a live host, these famous space robots take children on a tour of the universe. See how satellites and probes — the real space robots — help us learn about worlds near and far. Journey from the earth to other planets and distant black holes. Sat., Jan. 8, and Sat., March 5, at 11:45 a.m. Admission for Participating and Higher Members is \$4 for adults and \$2 for children. For additional information, call (212) 769-5900

Laser Shows

Journey into another dimension where laser visuals and rock music combine to create a dazzling 3-D experience of sight and sound. Shows are presented on Fridays and Saturdays at 7:00, 8:30, and 10:00 p.m. For prices and show schedule, telephone (212) 769-5100. Please note that there will be no laser shows on Dec. 24, 25, 31, and Jan. 1

Lecture. "Supernovas, Star Formation, and Us"
Monday, January 10, 7:30 p.m.
Number of Members' tickets at \$6 (no more than 4, please)
Number of non-Members' tickets at \$8
Total amount enclosed
Name: _____
Address: _____
City: _____ State: _____ Zip _____
Daytime telephone _____
Membership category: _____
Please make check payable to the Hayden Planetarium and mail with a self-addressed, stamped envelope to: Lecture, Hayden Planetarium, Central Park West at 81st Street New York, NY 10024-5192
Please note that ticket orders are subject to availability and cannot be processed without telephone number and stamped, self-addressed envelope. Do not include ticket requests or checks for American Museum programs.

Sun

Mon

Tue

Wed

Thu

Fri

Sat

December 1993 American Museum of Natural History



1 7:30 p.m. Indigenous and "Mestizo" Music and Dance of the Andes. Main Auditorium. Free. Page 6.
7:45 p.m. Amateur Astronomers Association. Linder Theater. Free.

2 4:00 and 6:00 p.m. Members' Tours of the Con Edison Plant. \$16, and open only to Participating and Higher Members. Tickets required. Page 2.
SOLD OUT

3

4 9:00 a.m.-6:30 p.m. A Day with the Dinosaurs. Members day trip to the Philadelphia Academy of Natural Sciences. Tickets required. Page 2.
11:00 a.m. NY Map Society. Room 319. Free.
1:00-4:30 p.m. Music of the Indigenous Caribbean. The Columbian Change: Preserving Native Traditions. Leonhardt People Center. Free. Page 6.

5 1:00-4:30 p.m. Music of the Indigenous Caribbean: The Columbian Change: Preserving Native Traditions. Leonhardt People Center. Free. Page 6.

6 7:30 p.m. The Winter Revels. Members' holiday program. Main Auditorium. \$12 all children, \$17 for Members, \$22 for non-Members. Page 1.

The Garden Cafe is open from 5:00 to 7:00 p.m.

7 7:00 p.m. Latin American Film Program: Five Centuries Later. Kaufmann Theater. Free. Page 6.
7:30 p.m. The Winter Revels. Members' holiday program. Main Auditorium. \$12 all children, \$17 for Members, \$22 for non-Members. Page 1.

The Garden Cafe is open from 5:00 to 7:00 p.m.

Hannukah begins at sundown.

9 7:30 p.m. The Winter Revels. Members' holiday program. Sign language performance. Main Auditorium. \$12 for all children, \$17 for Members, \$22 for non-Members. Page 1.

10 7:00 p.m. Endangered Species: Restoring the Black Howler Monkey. Members evening program. Kaufmann Theater. Free for Members, \$8 for non-Members. Page 2.

11 10:30 and 11:30 a.m., 12:00 and 3:00 p.m. Origami Holiday Workshops. Tickets required. Page 2.
1:00-4:30 p.m. Indigenous Dances of Mexico: Through Native Eyes: Indigenous Folklore of Latin America. Leonhardt People Center. Free. Page 6.
6:30 p.m. The World Tour. Page 6.

12 1:00-4:30 p.m. Indigenous Dances of Mexico: Through Native Eyes: Indigenous Folklore of Latin America. Leonhardt People Center. Free. Page 6.
1:00 p.m. The World Tour. Page 6.
2:00 p.m. NY Shell Club. Room 319. Free.



14 7:30 p.m. Linnean Society of NY. Linder Theater. Free.

15 7:00 p.m. Valley Forge: 100 Years of Preservation. Members' evening program. Kaufmann Theater. \$7 for Members, \$10 for non-Members. Page 2.
7:30 p.m. Tenth Annual Holiday Concert Under the Stars. Sky Theater. \$15 for Members, \$18 for non-Members. Page 11.

16 5:30-7:30 p.m. Deciphering the Human Skeleton. Members' workshop. Tickets required. Page 2.
7:30 p.m. Tenth Annual Holiday Concert Under the Stars. Sky Theater. \$15 for Members, \$18 for non-Members. Page 11

17

18 10:30 a.m. and 1:30 p.m. Make a Holiday Gingerbread House. Members' adult-child workshop. Tickets required. Page 2. **SOLD OUT**
1:45 p.m. Natural History of the Holidays. Sign language tour. Page 6.

19 10:30 a.m. and 1:30 p.m. Make a Holiday Gingerbread House. Members' adult-child workshop. Tickets required. Page 2. **SOLD OUT**
2:00 p.m. NY Paleontological Society. Room 319. Free.

20

21 7:00 p.m. NY Entomological Society. Room 319. Free.

22

The Museum receives substantial support from a number of major sources. We are particularly grateful to the City of New York, which owns the Museum buildings and provides funds for their operation and maintenance, and to the New York State Council on the Arts, National Science Foundation, National Endowment for the Arts, National Endowment for the Humanities, Institute for Museum Services, 300 Arts, National Endowment for the Humanities, 520,000 members, and numerous individual corporations, 100 private foundations, 520,000 members, and numerous individual contributors

26

Entrances
During Museum hours visitors can enter the building through the 77th Street entrance, the parking lot entrance (81st Street), or the Roosevelt Memorial Hall entrance (79th Street and Central Park West). Visitors attending programs after hours can enter the building through the driveway entrance at 79th Street and Central Park West.

28

29

A Natural History of the Hudson Valley
Friends of Fishes and the Hudson River Foundation will sponsor Our Own Backyard, a five-part lecture series focusing on Hudson River ecology, geology, and hydrology. The series will take place from 6:30 to 8:30 p.m. on five consecutive Wednesdays, starting January 19
For further information call (212) 289-3605 or fax (212) 360-6625

Moving?

Please use this coupon to let us know your change of address. Be sure to enclose a copy of your old address (you can use the mailing label from the cover of your copy of Rotunda), and allow six to eight weeks for our fulfillment center to process your notification.

Rotunda address change

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime telephone: _____

Membership category: _____

Mail to: Natural History/Rotunda, Membership Services, PO Box 5000, Haddon, IA 51537

25 Christmas. The Museum is closed.



